



THE JOHNS HOPKINS UNIVERSITY  
BALTIMORE, MARYLAND

*Conferring of Degrees*  
*at the close of the eighty-sixth academic year*



JUNE 12, 1962  
Keyser Quadrangle  
Homewood



# ORDER OF PROCESSION

## *The Graduates*

### *Marshals*

JAMES H. CARPENTER  
ALPHONSE CHAPANIS  
CARL F. CHRIST  
STANLEY CORRSIN  
PALMER FUTCHER  
JOHN W. GRYDER

EDGAR A. J. JOHNSON  
RICHARD J. KOKES  
JAMES L. KUETHIE  
ALVIN NASON  
PETER E. WAGNER  
CHARLES M. WYLIE

\*

## *The Faculties*

### *Marshals*

JAMES W. POULTNEY and JOHN WALTON

\*

## *The Deans, The Trustees and Honored Guests*

### *Marshals*

NATHAN EDELMAN and M. GORDON WOLMAN

\*

## *The Chaplain*

## *The Presentors of the Honorary Degree Candidate*

### *The Candidates*

### *The Commencement Speaker*

### *The Chairman of the Board of Trustees*

### *The President of the University*

### *Chief Marshal*

DONALD H. ANDREWS

### *Assistant Marshal*

FRANCIS H. CLAUSER

\*

## *For the Presentation of Diplomas*

### *Marshals*

MAURICE J. BESSMAN  
WILLIAM H. HUGGINS

STEWART H. HULSE, JR.  
W. KELSO MORRILL

\*

*The ushers are undergraduate students of  
The Johns Hopkins University*

# ORDER OF EVENTS

*Milton Stover Eisenhower, President of the University, presiding*

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## PROCESSIONAL

MARCHE SOLENNELLE — FELIX BOROWSKI

*John H. Elterman, Organist*

*The audience is requested to stand as the Academic Procession moves into the area and to remain standing until after the Invocation and the singing of the National Anthem.*

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## INVOCATION

*The Right Reverend Noble C. Powell*

\*

THE STAR SPANGLED BANNER

THE UNIVERSITY ODE

\*

## GREETINGS TO PARENTS

CHARLES S. GARLAND

*Chairman of the Board of Trustees*

\*

## CONFERRING OF HONORARY DEGREES

WILLIAM BENNETT KOUWENHOVEN

*Presented by Ferdinand Hamburger, Jr.*

JULIUS ADAMS STRATTON

*Presented by Francis H. Clauser*

\*

## ADDRESS

JULIUS ADAMS STRATTON

*President,*

*Massachusetts Institute of Technology*

# ORDER OF EVENTS

*Continued*

## CONFERRING OF DEGREES ON CANDIDATES

*Presented by Dean G. Heberton Evans, Jr.:*

BACHELORS OF ARTS

*Presented by Dean Robert H. Roy:*

BACHELORS OF ENGINEERING SCIENCE

MASTERS OF SCIENCE IN ENGINEERING • DOCTORS OF ENGINEERING

*Presented by Dean Richard A. Mumma:*

BACHELORS OF SCIENCE • BACHELORS OF SCIENCE IN NURSING

BACHELORS OF SCIENCE IN ENGINEERING

MASTERS OF SCIENCE IN ENGINEERING

MASTERS OF SCIENCE • MASTERS OF EDUCATION

CERTIFICATES OF ADVANCED STUDY IN EDUCATION

*Presented by Dean Ernest L. Stebbins:*

MASTERS OF SCIENCE • DOCTORS OF SCIENCE

MASTERS OF PUBLIC HEALTH • DOCTORS OF PUBLIC HEALTH

*Presented by Dean Thomas B. Turner:*

DOCTORS OF MEDICINE

*Presented by Dean Francis O. Wilcox:*

MASTERS OF ARTS

SCHOOL OF ADVANCED INTERNATIONAL STUDIES

*Presented by Dean G. Heberton Evans, Jr.:*

MASTERS OF ARTS IN TEACHING

MASTERS OF ARTS • DOCTORS OF PHILOSOPHY

\*

## CHARGE TO GRADUATES

*The President of the University*

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## BENEDICTION

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## RECESSIONAL

MARCHE — FELIX MENDELSSOHN

*The audience is requested to remain standing after the Benediction  
until the faculties and graduates have left the area.*

The Alumni Association of The Johns Hopkins University invites all graduates, their relatives and friends, and the members of the faculty to attend a reception on Keyser Quadrangle immediately following the Commencement Exercises.

# ACADEMIC DRESS

THE custom of wearing academic dress stems from the Middle Ages, when scholars were also clerics and wore the costume of their monastic order. The hood was originally a cowl attached to the gown which could be slipped over the head for warmth. The cap, originally round, later became the square mortar-board as we see it today.

Today the cap is the same for all American degrees, although the recipient of a doctoral degree is entitled to wear a gold tassel. The gown varies for the respective degrees. The Bachelor's gown is worn closed and can be distinguished by its long, pointed sleeves. The Master's gown is designed to be open with the arms worn through the slits in the elbows of the sleeves. The Doctor's gown, also worn open, has full, bell-shaped sleeves with three horizontal bars stitched across the upper arm. There is a velvet panel draped around the neck and stitched down the front edges. This velvet trimming may be either black or the same color as the velvet border of the hood.

The hood also varies for the respective degrees. The Bachelor's and Master's hoods are of the same design, pointed at the base. The Bachelor's hood is three feet long; the Master's hood is three and one half feet long. The Doctor's hood is four feet long, of fuller shape and rounded at the base.

The hood is bordered with velvet, the color of which indicates the field of study in which the degree was earned:

blue .....	Philosophy
orange .....	Engineering
gold-yellow .....	Science
green .....	Medicine
pink .....	Music
purple .....	Laws
scarlet .....	Theology
white .....	Arts and Letters

The silk lining of the hood represents the institution which granted the degree. If more than one degree is held, the gown and hood of the higher or highest degree is worn. The linings seen in today's academic procession may include:

## BLACK

black, old gold chevron.....Johns Hopkins

## BLUE

light blue, white chevron.....Columbia  
dark blue.....Yale  
blue with white chevron.....Duke  
dark blue, two orange chevrons..Illinois  
light blue, two white chevrons...North Carolina

## GOLD

old gold, maron chevron.....Minnesota  
old gold.....Iowa  
gold, blue chevron.....California  
gold .....

## PURPLE

purple, gold chevron.....Northwestern  
purple .....

University

## RED

bright red.....Wisconsin  
plum, with scarlet.....London  
maroon .....

Chicago

crimson .....

Harvard

carnelian, two white chevrons..Cornell

cardinal .....

Stanford

red, tri-chevron in center.....Heidelberg

## YELLOW

dandelion yellow.....Rochester  
maize, azure blue chevron.....Michigan  
yellow and white.....Sorbonne



# CANDIDATES FOR DEGREES

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## BACHELORS OF ARTS

- ROBERT JOHN ABERNETHY, of Baltimore, Md.  
PETER RANDOLPH ABESON, of New York, N. Y.  
RAYMOND DAVID ADELMAN, of Canton, Ohio  
HARRY DEAN ALBERT, of Brooklyn, N. Y.  
KARL ELMO ANDERSON, of Princeton, N. J.  
MICHAEL RICHARD ANTOPOL, of New York, N. Y.  
LAWRENCE DENNIS ARONSON, of Baltimore, Md.  
ROBERT BRUCE BARON, of Baltimore, Md.  
JOHN JOSEPH BARRETT, of Baltimore, Md.  
FREDERIC ALLAN BERGERSON, of Baltimore, Md.  
MICHAEL TOBIAS BERNSTEIN, of Silver Spring, Md.  
RONALD JOHN BILLY, of Peabody, Mass.  
ARNOLD SAUL BLAUSTEIN, of Baltimore, Md.  
RICHARD STEVEN BOCKMAN, of Ellenville, N. Y.  
WALTER MICHAEL BOEHM, of Chattanooga, Tenn.  
JOHN JOSEPH BOGUTA, of Baltimore, Md.  
WILLIAM ROBERT BOSLEY, of Towson, Md.  
WALTER MARTIN BRAUNHILDER, of Mountain Lakes, N. J.  
CARL ERIC BREDENBERG, Jr., of Milford, Conn.  
JOSEPH THOMAS BRENNAN, of Baltimore, Md.  
ALBERT BASIL BRICCETTI, of Somers, N. Y.  
JOHN A. BRYANT, Jr., of Baltimore, Md.  
THOMAS CAMPBELL BUTLER, of Chapel Hill, N. C.  
DONALD STUART CAMERON, of Lake Placid, N. Y.  
THOMAS EARLE CARNES, of Grosse Pointe, Mich.  
HARRISON DWIGHT CAVANAGH, of Atlantic Beach, Fla.  
JERRY BERNHARD CHARITON, of Allentown, Pa.  
JOSEPH ANTHONY CIONI, of Baltimore, Md.  
ARTHUR HORTON CLEVELAND, III, of Chadd's Ford, Pa.  
MICHAEL HENRY COHEN, of Baltimore, Md.  
EDWARD SAUL COHN, of Hanover, Pa.  
JAMES PATRICK CONNOLLY, of Simsbury, Conn.  
CHARLES CHRISTOPHER CRUMPLER, of Ozark, Ala.  
ROBERT HERRING DAWSON, of Brooklyn, N. Y.  
FREDERICK TIMOTHY DE KUYPER, of Baltimore, Md.  
SAMUEL BERYL DICKASON, of Redondo Beach, Calif.  
JOSEPH ANDREW DONADIO, of North Bergen, N. J.  
JOHN HENRY DOUD, III, of Baltimore, Md.  
JOHN NICHOLAS DRAGOUMIS, of Athens, Greece  
JEAN BERNARD DU BUY, of Bethesda, Md.  
ROBERT JAMES DYMOWSKI, of Baltimore, Md.  
ROBERT VALENTINO EDWARDS, of Baltimore, Md.  
PUDGE NELSON ELLWOOD, of Aberdeen, S. D.  
THOMAS HOWARD EMORY, of Towson, Md.  
WILLIAM DAVID ERTAG, of Newark, N. J.  
RICHARD JOSEPH ESTEVES, of North Tarrytown, N. Y.  
EDWARD NATHANIEL EVANS, II, of Cambridge, Md.  
HUNTER VANDORN FARNHAM, of Glen Cove, N. Y.  
LOUIS SAMUEL FELDMAN, of Baltimore, Md.  
ROY ELIOT FELDMAN, of Hempstead, N. Y.  
JOSEPH FERRANTE, Jr., of Ridgefield, N. J.  
CHARLES BERNARD FETHE, of Baltimore, Md.  
GORDON PERRY FLAKE, of Baltimore, Md.  
WILLIAM JOSEPH FLANNERY, III, of Garden City, N. Y.  
JEFFREY EDWARD FLATGAARD, of Dallas, Texas  
RONALD JAMES FRIANT, of Johnstown, Pa.  
WILFRED YORIO FUJIMOTO, of Hilo, Hawaii  
CHARLES PAUL GAILUNAS, of Torrington, Conn.  
THOMAS PAUL GALINSKI, of Sayreville, N. J.  
KENNETH CHARLES GERTSEN, of Brooklyn, N. Y.  
JANIS ANN GLICKSTEIN, of West Hartford, Conn.  
ALAN JACK GOLD, of Butte, Mont.  
MARSHALL COLMAN GOLDBERG, of Baltimore, Md.  
MICHAEL JAY GOLDEN, of Great Neck, N. Y.  
ALAN WILLIAM GOLDSTEIN, of Great Neck, N. Y.  
MELVIN ALLAN GOODMAN, of Baltimore, Md.  
DANIEL NATHAN GORDON, of Yonkers, N. Y.  
BRUCE WILLIAM GRAMS, of Schenectady, N. Y.  
SAMUEL WILLIAM GREENBLATT, of Fairfield, Conn.  
STEPHEN HOWARD GREENSPAN, of New York, N. Y.  
WILLIAM THOMAS GRIFFITH, of Palmerton, Pa.  
IRVING EDWARD HAMPE, Jr., of Baltimore, Md.  
ROBERT WILLIAM HARRINGTON, of Arlington, Heights, Ill.  
PAUL SHERWOOD HARRIS, Jr., of Baltimore, Md.  
JOHN KEITH HATCH, of McLean, Va.  
ROGER BENJAMIN HAWK, of Baltimore, Md.  
JONATHAN SAMUEL HAYES, of Bethesda, Md.  
JEREMY WILLIAM HEAD, of Gloucester, Va.  
LYMAN HOWARD HEINE, Jr., of Fremont, Nebr.  
STANLEY JAY HELLER, of Huntingdon Valley, Pa.  
BRIAN ROBERT HENDERSON, of Chicago, Ill.  
RICHARD JAY HIMELFARB, of Baltimore, Md.  
DICKSON JAMES HINGSON, of Cleveland Heights, Ohio  
RICHARD JAMES HIRSCHMAN, of Mount Vernon, N. Y.  
DONALD HUGH HISLOP, of Elkton, Md.  
DOUGLAS HERENDEEN HURLBURT, of Silver Spring, Md.  
FRANCIS DESMOND HUSSEY, Jr., of Huntington, N. Y.  
BAILEY EDWARD HUTMAN, of Baltimore, Md.  
MURRAY HARVEY HYMAN, of Baltimore, Md.  
ROBERT BARRY ISAACS, of Baltimore, Md.  
JAMES WILCOX IVES, Jr., of Baltimore, Md.  
MARTIN DONALD JAHN, of Baltimore, Md.  
ALLEN DRESS JOHNSON, of Evansville, Ind.  
MAX SHERRED JOHNSON, Jr., of Washington, D. C.  
RALPH ARNOLD JOHNSON, Jr., of Staten Island, N. Y.  
WILLIAM RUDOLPH KANNE, Jr., of San Jose, Calif.  
PETER PAUL KARASZ, of Washington, D. C.  
ARNOLD SAMUEL KAS, of Washington, D. C.

GARY MICHAEL KAYAJANIAN, of Abington, Pa.  
 JOHN HENRY KELLY, of Shamokin, Pa.  
 THOMAS J. KELLY, JR., of Weston, Mass.  
 DAVID SETON KIERNAN, of Lawrence, Mass.  
 RAYMOND EDGAR KNOWLES, JR., of Baltimore, Md.  
 RONALD HOWARD KOENIG, of Baltimore, Md.  
 WILLIAM FREDERICK KOSCH, III, of Point Pleasant, N. J.  
 RICHARD MARK KOVENS, of Pikesville, Md.  
 RICHARD KUNNES, of Mt. Penn, Pa.  
 LYNTON STUART LAND, of Baltimore, Md.  
 DAVID PAUL LEONHARD, of Baltimore, Md.  
 KENNETH LEVINE, of Great Neck, N. Y.  
 JONATHAN ALAN LEWIS, of Youngstown, Ohio  
 MICHAEL J. LIEBEN, of Englewood, N. J.  
 GEORGE JAMES LIMBERT, of Youngstown, Ohio  
 ROBERTO CARLOS LOIEDERMAN, of Baltimore, Md.  
 JOHN CLYDE LOVE, of Birmingham, Mich.  
 TIMOTHY DEMING LOWREY, of Mansfield, Ohio.  
 MICHAEL LYTELL, of Livingston, N. J.  
 RICHARD D. MAFFEZZOLI, of Morrisville, Pa.  
 PAUL STEPHEN MAGID, of Scarsdale, N. Y.  
 CARL PASQUALE MARINACCI, of Uniontown, Pa.  
 ROY DOWN MAYNE, JR., of Baltimore, Md.  
 STEPHEN DOUGLAS MAZOH, of Baltimore, Md.  
 CHARLES FREDERICK MCCLURE, of Silver Spring, Md.  
 MANUS EAMONN MCGEADY, of Baltimore, Md.  
 JAMES WESTWOOD MCIVER, JR., of Palo Alto, Calif.  
 HENRY GEORGE MEREDITH, JR., of Cockeysville, Md.  
 BARRY GERALD MILLER, of Allentown, Pa.  
 ROBERT HYLAND MILLER, of Baltimore, Md.  
 LEE P. MINICHELLO, of Falls Church, Va.  
 ROGER ARTHUR MORRISON, of Arlington, Va.  
 JEFFRIE GUY MURPHY, of Long Beach, Calif.  
 PHILIP AUSTIN MURPHY, of Baltimore, Md.  
 THOMAS WILSON MURRAY, of Baltimore, Md.  
 CLARENCE M. NAGAO, of Hilo, Hawaii  
 CHARLES MERRILL NATHAN, of South Orange, N. J.  
 STEVEN JOEL NATHAN, of Flushing, N. Y.  
 JAMES CHESTON MORRIS NEWBOLD, of Jenkintown, Pa.  
 JAMES JOHN NICASTRO, of Baltimore, Md.  
 ROBERT PRESTON NITZELL, of Hagerstown, Md.  
 JOSEPH JAMES NOTOPOULOS, of West Hartford, Conn.  
 FRANKLIN ROBERT OELSCHLAGER, of Baltimore, Md.  
 MARTIN LAWRENCE PALL, of Baltimore, Md.  
 TIM HENNESSY PARMLEY, of Wichita, Kan.  
 KENNETH PASSAMANECK, of Danville, Va.  
 ROBERT BREWSTER PATTEN, of Wellesley Hills, Mass.  
 RICHARD HENRY PECKHAM, JR., of Milford, Conn.  
 GARY G. PERRAS, of Baltimore, Md.  
 PHILLIPS WINDSOR PETERS, JR., of Baltimore, Md.  
 WILLIAM EDWARD PINCKARD, III, of Houston, Texas  
 GARY DAVID PLOTNICK, of Baltimore, Md.  
 JUDITH E. PORTER, of Lexington, Mass.  
 ERIC HUBERT POWELL, of Norwalk, Conn.  
 RICHARD BAILEY PRICE, of Baltimore, Md.  
 ROBERT REINHOLD, of Brooklyn, N. Y.  
 MARY TERESA REPOLE, of New York, N. Y.  
 JAMES DAVID REUTER, of Baltimore, Md.  
 DAVID MORGENSTEIN RICCI, of Silver Spring, Md.  
 PAUL RICHARD RIVERA, of Catonsville, Md.  
 BRIAN KENNETH RIZEN, of Wilmington, Del.  
 FREDERICK HERMAN ROBINS, of New Castle, Pa.  
 E. ALLEN ROBINSON, of Baltimore, Md.  
 JEFFREY MICHAEL ROBINSON, of Elmont, N. Y.  
 MICHAEL JAY ROKOFF, of Baltimore, Md.  
 MICHAEL GEOFFREY ROSENFELD, of Baltimore, Md.  
 ALEXANDER JOHN ROSS, of Chicago, Ill.  
 ERROL BORIS RUBIN, of Quincy, Mass.  
 CARL EDGAR RUSSELL, of Wayne, Pa.  
 WALTER IRVING SALGANIK, of Baltimore, Md.  
 MELVIN JOHN SANDERS, JR., of Baltimore, Md.  
 JEFFREY JOSEPH SANDHAUS, of Hewlett Bay Park, N. Y.  
 FREDERIC RICKY SAULL, of Camden, N. J.  
 ERIC SCHNAPPER, of Silver Spring, Md.  
 LAWRENCE SCHOFFER, of Baltimore, Md.  
 JOHN WILLIAM SCHOTT, of LaSalle, Ill.  
 MARIO R. SCHWABE, of San Juan, Puerto Rico  
 IAN MARSHALL SHENK, of Washington, D. C.  
 ALLEN BROOKS SHEVACH, of Miami Beach, Fla.  
 MELVIN JEROME SILVERSTEIN, of Albany, N. Y.  
 BARTON BERRY SKEEN, JR., of Baltimore, Md.  
 STANLEY FRANCIS SLIWINSKI, JR., of Carnegie, Pa.  
 NORMAN SMELKINSON, of Baltimore, Md.  
 KENNETH MERLIN SMITH, of Homewood, Ill.  
 FREDERICK HOWARD STALFORT, of Baltimore, Md.  
 RAYMOND HILLMAN STARR, JR., of Kansas City, Mo.  
 BARRY S. STRAUCH, of Woodmere, N. Y.  
 JOHN DENNIS SULLIVAN, of Baltimore, Md.  
 MICHAEL BENEDICT SUNDERMEYER, of Gettysburg, Pa.  
 PHILLIP MCKAY SUTLEY, of Baltimore, Md.  
 JOSEPH CHARLES TERRY, of Baltimore, Md.  
 ANDREW THOMAS, of Chicago Heights, Ill.  
 JAMES GEORGE TRUSCOTT, of Baltimore, Md.  
 DANIEL B. TUEK, of East Patchogue, N. Y.  
 PETER G. TUTEUR, of Chicago, Ill.  
 WILLIAM HENRY VARNEY, of Washington, N. J.  
 BRUCE GERALD VERLEN, of Baltimore, Md.  
 STEVEN COERTEN VAN VOORHEES, of Deland, Fla.  
 JEAN WALTERS, of Brooklyn, N. Y.  
 SAMUEL CARSON WASSON, JR., of Rosemont, Pa.  
 MATTHEW SAUL WATSON, of Chevy Chase, Md.  
 MYRON LEE WEISFELDT, of Milwaukee, Wis.  
 STANLEY DUFF WEISS, of Cedarhurst, N. Y.  
 WILLIAM JOSEPH WESTERKAM, of Baltimore, Md.  
 DAVID ADAMS WHIP, of Baltimore, Md.  
 MARK EDWARD WILLIAMSON, of Chevy Chase, Md.  
 MORRIS ALAN WISE, of Baltimore, Md.  
 PATRICIA BRAUMAN WOLF, of Baltimore, Md.  
 MICHAEL GOWEN WORTHINGTON, of Fort Lewis, Wash.  
 WILLIAM PIATT YOUNG, JR., of Hagerstown, Md.  
 GEORGE BOHDAN YURCHYSHYN, of Hibbing, Minn.  
 STUART HOWARD YUSPA, of Pikesville, Md.  
 JOSEPH SIDNEY ZOLIN, of Baltimore, Md.



### *Graduating with General Honors*

MICHAEL TOBIAS BERNSTEIN  
JOHN JOSEPH BOGUTA  
THOMAS EARLE CARNES  
HARRISON DWIGHT CAVANAGH  
JERRY BERNHARD CHARITON  
MICHAEL HENRY COHEN  
JOSEPH ANDREW DONADIO  
CHARLES BERNARD FETHE  
GORDON PERRY FLAKE  
JEFFREY EDWARD FLATGAARD  
WILFRED YORIO FUJIMOTO  
MARSHALL COLMAN GOLDBERG  
WILLIAM THOMAS GRIFFITH  
BRIAN ROBERT HENDERSON  
RICHARD JAY HIMELFARB  
DICKSON JAMES HINGSON  
ARNOLD SAMUEL KAS  
THOMAS JESSE KELLY, JR.  
RAYMOND EDGAR KNOWLES, JR.  
WILLIAM FREDRICH KOSCH, III  
RICHARD MARK KOVENS

MICHAEL J. LIEBEN  
RICHARD D. MAFFEZZOLI  
STEPHEN DOUGLAS MAZOH  
ROBERT HYLAND MILLER  
LEE P. MINICHELLO  
CHARLES MERRILL NATHAN  
MARTIN LAWRENCE PALL  
DAVID MORGENSTEIN RICCI  
PAUL RICHARD RIVERA  
MICHAEL GEOFFREY ROSENFELD  
ERIC SCHNAPPER  
LAWRENCE SCHOFER  
JOHN WILLIAM SCHIOTT  
IAN MARSHALL SIENK  
ALLEN BROOKS SIEVAH  
DANIEL B. TUEK  
MATTHEW SAUL WATSON  
MYRON LEE WEISFELDT  
WILLIAM JOSEPH WESTERKAM  
DAVID ADAMS WHIP

### *Graduating with Departmental Honors*

JERRY BERNHARD CHARITON  
JOSEPH ANDREW DONADIO  
ROY ELIOT FELDMAN  
CHARLES BERNARD FETHE  
JEFFREY EDWARD FLATGAARD  
JEREMY WILLIAM HEAD  
BRIAN ROBERT HENDERSON  
RICHARD JAY HIMELFARB  
ARNOLD SAMUEL KAS  
WILLIAM FREDRICH KOSCH, III  
STEPHEN DOUGLAS MAZOH

BARRY GERALD MILLER  
JEFFRIE GUY MURPHY  
CHARLES MERRILL NATHAN  
JAMES DAVID RENTER  
DAVID MORGENSTEIN RICCI  
PAUL RICHARD RIVERA  
LAWRENCE SCHOFER  
ANDREW THOMAS  
MATTHEW SAUL WATSON  
DAVID ADAMS WHIP

### *BACHELORS OF ENGINEERING SCIENCE*

MARTIN STANLEY ABRAMSON, of Baltimore, Md.  
ROBERT ANDREW AMTMANN, of Baltimore, Md.  
GEORGE HUNTINGTON BANISTER, of Baltimore, Md.  
GLENN RICHARD BARNARD, of Damascus, Md.  
RICHARD HARMAN BECKER, of Evansville, Ind.  
VERNON RONALD BECKER, of Baltimore, Md.  
ROBERT ALLEN BOENNING, of Baltimore, Md.  
KENNETH ALVIN BORGFELDT, of Arbutus, Md.  
PHILLIPS VERNER BRADFORD, of Fairfax, Va.  
KENNETH ROY BRYSON, of Fallston, Md.  
IRVIN HORN CHAMBERLAIN, of Baltimore, Md.  
ROBERT P. CHAMBERS, JR., of Baltimore, Md.  
HOUSTON MORGAN COLE, of Timonium, Md.  
JONATHAN BENNING CROOKS, of Baltimore, Md.  
FRANK JOSEPH DIPETRO, JR., of Penns Grove, N. J.  
HERBERT WARFIELD DORSEY, of Baltimore, Md.

WILLIAM JOHNSON DUNNETT, of Cockeysville, Md.  
CHARLES M. ERMER, JR., of Baltimore, Md.  
JAMES CHARLES FITZPATRICK, of Baltimore, Md.  
CARL JOHN GUNDERSDORF, of Baltimore, Md.  
STEPHEN BRIAN HAMILTON, of Baltimore, Md.  
VASCAR GODFREY HARRIS, of Lynchburg, Va.  
MILTON SIEGMUND HESS, of Baltimore, Md.  
LEO BERNARD HOLLEIN, JR., of Baltimore, Md.  
GEORGE ANDREW HOZA, of Baltimore, Md.  
WILLIAM JAMES HULL, JR., of Darlington, Md.  
ALLAN WILLIAM JOHNSON, JR., of Towson, Md.  
RONALD EDWARD JOHNSON, of Baltimore, Md.  
WILLIAM VALENTINE KARPOVICH, of Baltimore, Md.  
JOHN DAVID KASTANEK, of Baltimore, Md.  
ROBERT GARRETT KEANE, JR., of Baltimore, Md.  
DERWIN FINCANNON KIM, of Baltimore, Md.

LAWRENCE CARTER KOHLENSTEIN, of Baltimore, Md.  
 JOSEPH JOHN KOPEC, of Baltimore, Md.  
 HARVEY DAVID KUCHERER, of Baltimore, Md.  
 JAMES GEORGE KUYAWA, JR., of Baltimore, Md.  
 DANIEL JOSEPH LADD, of Pasadena, Md.  
 JERRY LAND, of Baltimore, Md.  
 JAMES N. R. LANDMAN, of Tenafly, N. J.  
 ALLAN HENRY LAYMAN, JR., of Baltimore, Md.  
 ROBERT WASHINGTON LEE, JR., of Baltimore, Md.  
 RALPH MARTIN LESTER, JR., of Baltimore, Md.  
 WILLIAM ERVIN LEWIS, of Hagerstown, Md.  
 JOSEPH IRVING LORENZ, of Baltimore, Md.  
 WALTER ANTHONY LUBRESKI, of Baltimore, Md.  
 EDWARD STANLEY MAZANEK, JR., of Baltimore, Md.  
 RICHARD TAYLOR MCGEEHAN, of Baltimore, Md.  
 ROBERT LOUIS MCGILL, JR., of Baltimore, Md.  
 ROBERT LEE MEYERS, of Baltimore, Md.  
 JOHN GORDON MINTIENS, of Baltimore, Md.  
 BRUCE CAMERON MITCHELL, of Baltimore, Md.  
 JOHN SAMUEL MITCHELL, JR., of Perry Hall, Md.  
 WILLIAM LEE MOOG, of Baltimore, Md.  
 PAUL EUGENE MUSICANT, of Silver Spring, Md.  
 MICHAEL RICHARD NATALE, of Baltimore, Md.  
 ROBERT RONALD NATALE, of Baltimore, Md.  
 MICHAEL ANTHONY OLIVERI, of Washington, D. C.

SAMUEL VICTOR OWENS, of Baltimore, Md.  
 DAVID LEWIS PERMAN, of Baltimore, Md.  
 LARRY FREDERICK PIFER, of Lewiston, N. Y.  
 TIMOTHY REED PRYOR, of Baltimore, Md.  
 ROBERT RICHARD RAUB, of Baltimore, Md.  
 HARRY THOMAS REYNOLDS, of Smithsburg, Md.  
 DAVID HARRIS ROWE, of Indian Head, Md.  
 MARK E. RUBENSTEIN, of Wilmington, Del.  
 CHARLES CARROLL SCHUELER, of Perryman, Md.  
 JAMES EDWARD SCRIVENER, of Valley Lee, Md.  
 DALE LEE STEIGER, of Baltimore, Md.  
 RONALD GEORGE STEIGERWALD, of Baltimore, Md.  
 DONALD LAWRENCE STEINER, of Milford, Del.  
 GEORGE STUEHLER, JR., of Baltimore, Md.  
 NELSON EUGENE SWEGLAR, of Baltimore, Md.  
 EDWARD WAYNE TOBERY, of Frederick, Md.  
 RAIVO VEST, of Baltimore, Md.  
 DAVID ELDREDGE VORIS, of Baltimore, Md.  
 HAROLD WALPERT, of Baltimore, Md.  
 WILLIAM BUFFINGTON WARD, of Baltimore, Md.  
 RONALD WILLIAM WAYNANT, of Baltimore, Md.  
 STEPHEN JAMES WEBER, of Baltimore, Md.  
 BARRY MARSHALL YAFFE, of Baltimore, Md.  
 FREDERICK PORTER YODER, of Baltimore, Md.  
 GEORGE RAYMOND ZAISER II, of Baltimore, Md.

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### *Graduating with Highest Honors*

MILTON SIEGMUND HESS

### *Graduating with Honors*

ALLAN WILLIAM JOHNSON, JR.  
 RALPH MARTIN LESTER, JR.  
 PAUL EUGENE MUSICANT  
 MICHAEL RICHARD NATALE

ROBERT RONALD NATALE  
 MARK E. RUBENSTEIN  
 BARRY MARSHALL YAFFEE

## *MASTERS OF SCIENCE IN ENGINEERING*

### *with titles of essays*

ROY BERNARD ADAMS, of Houston, Texas, B. S. in Eng.  
 Physics, University of Oklahoma, 1960. Electrical Engi-  
 neering.

The Application of Superconductivity to Cryogenic  
 Computer Memory Cells.

RICHARD LEE BALL, JR., of Baltimore, Md., B. S. in Physics  
 Loyola College, 1958; B. E. S. The Johns Hopkins Uni-  
 versity, 1961. Sanitary Engineering and Water Resources.

Capital Improvement Projects: Original Recommenda-  
 tion vs. Accomplished Improvement.

RONALD D. BROWN, of Silver Spring, Md., B. S. in Ch. E.  
 University of Illinois, 1959. Chemical Engineering.

Diffusion Into a Flowing Non-Newtonian Liquid.

FRANK GEDDES CHU CHEONG, of St. Joseph, Trinidad, West  
 Indies. Sanitary Engineering and Water Resources.

The Design of Equipment for the Disinfection of  
 Water Supplies with Iodine.

LAWRENCE EDWARD DICKENS, of Baltimore, Md., B. S. in Eng.  
 The Johns Hopkins University, 1960. Electrical Engi-  
 neering.

The Tunnel Diode: A New Microwave Device.

LEROY DAVID DICKSON, of Baltimore, Md., B. E. S. The  
 Johns Hopkins University, 1960. Electrical Engineering.

Survey of Diagnostic Techniques Used to Determine  
 Temperature and Density in Plasmas.

ARTHUR LEROY ERICKSON, of Vermillion, S. Dak., B. S.  
 United States Military Academy, 1952. Mechanics.

Aerodynamics of a Baseball.

- CHU-MIN FU, of Taipei, Taiwan, B.S. National Taiwan University, 1957. Mechanics.  
The Analogy between Stresses Due to Dislocations and Those Due to Temperatures for Nonlinear Materials.
- FRANCIS CHUN WA FUNG, of Hong Kong, Sc.B. in Eng. Brown University, 1960. Mechanics.  
Asymptotic Solution for Source-Sink Flow in a Strong Magnetic Field.
- ROBERT GABRIEL GALUPPI, of Baltimore, Md., B.E.S. The Johns Hopkins University, 1959. Electrical Engineering.  
Stability in Terms of Liapunov's Method.
- TOSHIHARU HASEGAWA, of Ashiya-City, Japan, B.S. Com. Eng. Osaka University, 1957; M.S. in Com. Eng., 1959. Electrical Engineering.  
Language Entropy and its Application to Linguistics.
- HOWARD JOSEPH HICKMAN, JR., of Houston, Texas, B.S. University of Maryland, 1956. Chemical Engineering.  
Charge Generation in Flow and Non-flow Systems.
- ARTHUR KENNETH HOCHBERG, of Baltimore, Md., B.E.S. The Johns Hopkins University, 1960. Electrical Engineering.  
The Electroluminescence of Inorganic Phosphors.
- JOHN MALLORY HOLMES, JR., of Crisfield, Md. Industrial Engineering.  
Inventory Control in a Telephone Company.
- EINAR FRODE INDSTANES, of Oslo, Norway, B.E.S. The Johns Hopkins University, 1960. Electrical Engineering.  
Tunnel Diodes.
- JOHN WILLIAMS KNAPP, Lexington, Va., B.S.C.E. Virginia Military Institute, 1954. Sanitary Engineering and Water Resources.  
The Measurement of Rainfall and Runoff on Areas Draining to Storm-Water Inlets.
- JOHN KREUTZBERG, JR., of Baltimore, Md., B.S. Northwestern University, 1949. Electrical Engineering.  
Reflections on Coaxial Transmission Lines.
- HANNA FARANCIS NAJJAR, of Rochester, N.Y., B.S. University of Wales, 1957. Electrical Engineering.  
Light Amplification by Stimulated Emission of Radiation.
- RAYMOND ARNOLD NOEL, of Grenada, West Indies, Diploma in S.Sc. West Indian School of Public Health, 1951; Diplomas in Building and Public Health Eng. Brixton School of Building, London, England, 1959. Sanitary Engineering and Water Resources.  
Chlorination of Water Supplies by Means of the Break-Point Process.
- CHARLES FRANK RITRIVI, of Baltimore, Md., B. of A.E. Polytechnic Institute of Brooklyn, 1958. Mechanics.  
Analysis of Cloud Streaks Observed by the Tiros I Meteorological Satellite.
- JUAN MIGUEL SABATER, of Santurce, Puerto Rico, B.E.S. The Johns Hopkins University, 1960. Electrical Engineering.  
Error Detecting and Error Correcting Codes.
- ROBERT BRUCE SAMWORTH, of Wilmington, Del., B.C.E. University of Delaware, 1959. Sanitary Engineering and Water Resources.  
Feasibility Study of a Laboratory Oxygen-Balance Model.
- FAWZI I. SHEHADI, of Beirut, Lebanon, B.A. in C.E. American University, Beirut, 1942; B.S. in C.E., 1946. Sanitary Engineering and Water Resources.  
Garbage Study of Beirut, Lebanon.
- LOUIS ALBERT SPITTEL, JR., of Baltimore, Md., B.S. University of Maryland, 1957. Sanitary Engineering and Water Resources.  
A Small-Scale Model Study of Friction Pile Groups in Cohesive Soil.
- ALBERT STEIN, of Baltimore, Md., B.S. The Pennsylvania State College, 1948. Mechanics.  
An Experimental Study of Incremental Plastic Wave Propagation.
- HOK JANG THUNG, of Bandung, Indonesia, B.Sc. University of Indonesia, 1959; M.Sc. in Chem. Technology, Bandung Institute of Technology, 1959. Sanitary Engineering and Water Resources.  
Salmonella Bacteria Removal in Oxidation Ponds.
- RICHARD C. TORTORIELLO, of Irvington, N.J., B.S.C.E. Newark College of Engineering, 1960. Sanitary Engineering and Water Resources.  
Characteristics of a Model Inlet Weir.
- HARVEY WOLFE, of Baltimore, Md., B.E.S. The Johns Hopkins University, 1960. Industrial Engineering.  
Optimal Length of Training for a Female Nursing Aide.

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## DOCTORS OF ENGINEERING

*with titles of dissertations*

JOSEPH LESLIE BALINTFY, of New Orleans, La., Diploma of Mech. Eng., Jozsef University of Polytechnics & Economics, Budapest, Hungary, 1947; Diploma of Economics, 1948. Industrial Engineering.

Mathematical Models and Analysis of Certain Stochastic Processes in General Hospitals.

WADE HAMPTON FOY, JR., of Baltimore, Md., B.S., U. S. Naval Academy, 1946; B.E.E. North Carolina State College, 1951; M. S. E. E. Massachusetts Institute of Technology, 1955. Electrical Engineering.

Random Parameters in Linear Systems.

GERARD BROWN GILBERT, JR., of Baltimore, Md., B.E. The Johns Hopkins University, 1953. Electrical Engineering.

Photoelectric Effects in Crystalline Germanium Films.

SIMON LAND GOREN, of Roselle, N. J., B.E.S., The Johns Hopkins University, 1958. Chemical Engineering.

Hydrodynamic Stability of Stagnant and Flowing Films.

WILLIAM WALTER HARDGRAVE, of Hazlet, N. J., A. B. Princeton University, 1959. Industrial Engineering.

A Fixed-Charge Network-Flow Problem in the Telephone Industry.

IHOR KOSZMAN, of Utica, N. Y., A. B. Columbia University, 1955; B. S. 1956; M. S. E. The Johns Hopkins University, 1959. Chemical Engineering.

Development of Charge in Low Conductivity Liquids Flowing Past Solid Surfaces.

LYDD KING LAUDERDALE, of Baltimore, Md., B.S. United States Naval Academy, 1949; M. S. E. The Johns Hopkins University, 1957. Electrical Engineering.

Spectral Characteristics of Random Modulated Waves.

FERDINAND FRANCIS LEIMKUHLE, JR., of West Lafayette, Ind., B. S. Loyola College, 1950; B. E. The Johns Hopkins University, 1952. Industrial Engineering.

An Operations Research Study of the Potential Accident Experience and Total Cost of Truck Shipments of Highly Radioactive Materials.

SAMUEL LITMAN, of Columbia, S. C., B. S. in E. E. University of South Carolina, 1935; M. S. in E. E. 1936. Electrical Engineering.

Identification of Multi-Parameter Systems.

JOHN THOMAS O'CONNOR, of Urbana, Ill., B. in C. E., Cooper Union, 1955. Sanitary Engineering and Water Resources.

A Study of Zinc in Natural Waters.

YIH-HO PAO, of Baltimore Md., B. S. National Taiwan University, 1955; M. S. in M. E. University of Illinois, 1958. Mechanics.

Diffusive Quantities in Turbulent Fluid.

THEODORE OTTO POEHLER, JR., of Baltimore, Md., B.E.S. The Johns Hopkins University, 1956; M.S.E. 1958. Electrical Engineering.

Study of Electrical Properties of Crystalline Germanium Films.

WILFREDO LOPEZ REYES, of San Jacinto, Republic of the Philippines, B. S. in C. E., University of the Philippines, 1949; M. P. H., 1957. Sanitary Engineering and Water Resources.

On Aerobic Digestion of Nightsoil.

WILLIAM G. ROSE, of Baltimore, Md., B.S.M.E. Brown University, 1949; M. S. E. The Johns Hopkins University, 1954. Mechanics.

Swirling Round Turbulent Jets.

ABRAHAM SORIANO, of Anaheim, California, B. Mgt. E. Rensselaer Polytechnic Institute, 1954; M. S. E. The Johns Hopkins University, 1960. Industrial Engineering.

On the Problem of Batch Arrivals and Its Application to a Scheduling System.

JOHN PAUL YOUNG, of Baltimore, Md. B. S. E. E. University of Maryland, 1950. Industrial Engineering.

A Queuing Theory Approach to the Control of Hospital Inpatient Census.

TZAY YUAN YOUNG, of Taipei, Taiwan, B.S. National Taiwan University, 1957; M. S. University of Vermont, 1959. Electrical Engineering.

Signal Theory and Electrocardiography.

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## *BACHELORS OF SCIENCE*

GLADYS MEADOWS ALLISON, of Bel Air, Md.	MELVIN STANLEY MARCINSKI, of Baltimore, Md.
HELEN PERKINS ARGENBRIGHT, of Salisbury, Md.	GENEVA LOUISE NILES MARNELL, of Baltimore, Md.
FELIX BAMBERGER, of Baltimore, Md.	ABBOTT WAITE MARTIN, of Baltimore, Md.
JOSEPH ANTHONY BARTELL, of Baltimore, Md.	TESSIE MATECHAK, of Baltimore, Md.
CYRIL OSWALD BECK, of Lutherville, Md.	G. W. MAYBEN, of Catonsville, Md.
GRACE ELIZABETH BERRY, of Baltimore, Md.	EDWARD RAINSFORD MCCOMAS, of Baltimore, Md.
HOWARD GEORGE BUDDENBOHN, of Baltimore, Md.	JOSEPH PATRICK MCINNIS, JR., of Baltimore, Md.
ERIC RAMON CARL, of Parkville, Md.,	WILLIAM RUSSELL MCLEOD, JR., of Baltimore, Md.
HELEN LOUISE CAROLINE, of Baltimore, Md.	HARRY JOSEPH McMAHON, of Belair-Bowie, Md.
EDMOND EARL CERVI, of Severna Park, Md.	RAMONS MIEZIS, of Rockville, Md.
FREDERICK EARL CHIPPENDALE, of Baltimore, Md.	RAYMOND OWINGS MILLER, of Baltimore, Md.
DANIEL STEPHEN CHMIELEWSKI, of Baltimore, Md.	WILLIAM EDWARD MORAN, of Baltimore, Md.
CALVIN NELSON CHURCH, of Baltimore, Md.	BERTHA LOCKLEY MOTTER, of Baltimore, Md.
WARREN EDWARD COLE, of Baltimore, Md.	LOUISE SMILEY MYERS, of Dundalk, Md.
JOHN EDWIN COULBOURN, of Randallstown, Md.	JOSEPH VICTOR NATALE, of Baltimore, Md.
WILLIAM JOSEPH CULLEN, of Baltimore, Md.	LAWRENCE FRANCIS NAUGHTON, JR., of Ellicott City, Md.
ALBERT CECIL DANSEREAU, of Baltimore, Md.	ROBERT MOULTON PACKARD, of Lutherville, Md.
RITA ROSE DAVIS, of Halethorpe, Md.	STEVE S. PAPAS, of Baltimore, Md.
JOSEPH MICHAEL DiBLASI, of Baltimore, Md.	RONALD IRVING PARSONS, of Baltimore, Md.
ROSS AINSWORTH DIERDORFF, JR., of Crownsville, Md.	JOSEPH FERDINAND PASSANO, II, of Baltimore, Md.
LOIS KEMP DOSCH, of Towson, Md.	JOSEPH HENRY PFISTER, of Baltimore, Md.
CHARLES DONALD FARNEN, of Baltimore, Md.	FRANK PRATT REXFORD, of Baltimore, Md.
RICHARD EMERY FREUDENBERGER, of Baltimore, Md.	ALPHONSO PITTS ROBINSON, II, of Baltimore, Md.
JUDSON ROWLAND GEIS, of Severna Park, Md.	ROBERT PHILBROOK RUSH, of Baltimore, Md.
ROBERT JOHN GILLEN, of Baldwin, N. Y.	GURNEY EDWARD SAMPSON, of Baltimore, Md.
ANTOINETTE JOY GLASNER, of Baltimore, Md.	RAMON ALBERT SARRIS, of Baltimore, Md.
MICHAEL THOMAS GREENE, of Baltimore, Md.	VIRGINIA BARNSTORFF LUER SCHMUCKER, of Baltimore, Md.
ROBERT LEE HAUSE, of Baltimore, Md.	THOMAS ARTHUR SIMONDS, of Lutherville, Md.
ALFRED HARRIS INNERS, of Towson, Md.	DAVID RONALD SMITH, of Baltimore, Md.
CLARENCE ALBERT JACKSON, JR., of Baltimore, Md.	HARRY ANDREW SMITH, of Riviera Beach, Md.
HENRY EMMET JOHNSEN, of Baltimore, Md.	CONSTANCE ANN BOSLEY STOLTZFUS, of Baltimore, Md.
HAZEL RING JOHNSON, of Baltimore, Md.	RENA DEITSCH SUGAR, of Baltimore, Md.
ALVIN KATZENSTEIN, of Baltimore, Md.	MARTIN FETSCH TOWLES, of Baltimore, Md.
LEROY ALLEN KELLEY, of Towson, Md.	ROBERT HARDESTY UPTON, of Baltimore, Md.
THEODORE L. KNIGHT, of Lutherville, Md.	MILTON FRANK VALENTA, of Severna Park, Md.
DAVID LAWRENCE KOPLOM, of Norfolk, Va.	LESTER FREDERICK WAGNER, JR., of Baltimore, Md.
PHILIP WILLIAM LINK, of Baltimore, Md.	ROBERT SAMUEL WARNICK, of Towson, Md.
SYLVIA FULLERTON GEROULD LOUGHAN, of Reisterstown, Md.	MARGARET FRIEDMAN WETZLER, of Baltimore, Md.
KELVIN DONALD MACHEMER, of Baltimore, Md.	WILLIAM HALLINAN WOOD, of Baltimore, Md.
AGNES ANN MACROGAN, of Baltimore, Md.	

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### *Graduating with Honors*

HAZEL RING JOHNSON	G. W. MAYBEN
THEODORE L. KNIGHT	FRANK PRATT REXFORD
SYLVIA FULLERTON GEROULD LOUGHAN	

## *BACHELORS OF SCIENCE IN NURSING*

ELIZABETH ANNE DUTE, of Chevy Chase, Md.	SYDNEY CATHERINE TALLY, of Griffiss, New York
MADOLON H. HENDERSON, of Hot Springs, N. C.	CHARLOTTE ANN TAYLOR, of Drayden, Md.
ELOSIA KATHERINE LEE, of Baltimore, Md.	ANNE MEIGS YOUNG, of Baltimore, Md.
GERTRUDE ANNE McALPINE, of Baltimore, Md.	

(7)

## BACHELORS OF SCIENCE IN ENGINEERING

MICHAEL LEWIS ANDERSON, of Baltimore, Md.  
ANDREW JACKSON ANNIS, JR., of Baltimore, Md.  
CHARLES FRANCIS BEASMAN, of Baltimore, Md.  
GORDON ALFRED BRILL, JR., of Timonium, Md.  
DANIEL WILSON BROWN, of Baltimore, Md.  
JOSEPH BUCCIERO, of Baltimore, Md.  
DOUGLAS EMERSON CLARK, of Baltimore, Md.  
CHARLES HENRY CLAYTON, JR., of Baltimore, Md.  
JAMES CHARLES ADAM CONNER, of Finksburg, Md.  
FREDERICK JAMES CONRAD, of Baltimore, Md.  
ARTHUR BLAKE CORNTHWAITE, JR., of Laurel, Md.  
JOHN EDWARD CROMWELL, of Baltimore, Md.  
CALVIN DOUGLAS CUSHMAN, JR., of Pittsburgh, Pa.  
THOMAS RONALD DASHIELL, of Frederick, Md.  
WILLIAM EDGAR DEHAVEN, JR., of Baltimore, Md.  
RICHARD PAUL DOOLEY, of Baltimore, Md.  
ROBERT LEE DOUGLASS, of Baltimore, Md.  
ELMAR EINBERG, of Baltimore, Md.  
JOSEPH LEON FAISANT, JR., of Towson, Md.  
FRANK JAMES FENYES, of Baltimore, Md.  
WILLIAM ERNEST FRANK, of Baltimore, Md.  
HUGH LIVINGSTON FRENCH, JR., of Randallstown, Md.  
WILLIAM FRANK GREENWOOD, JR., of Baltimore, Md.  
JOSEPH FRANCIS GUMNICK, of Baltimore, Md.  
MALCOLM CALVIN GWYNNE, of Baltimore, Md.  
JOHN BAUER HAINES, of Baltimore, Md.  
MILLARD WILLIAM HAJEK, of Baltimore, Md.  
JOSEPH GEORGE HENDERSON, of Baltimore, Md.  
HERSCHEL THEODORE HOCHMAN, of Baltimore, Md.  
JOSEPH MATTHEW HUGHES, of Baltimore, Md.  
THOMAS GERALD HUGHES, of Baltimore, Md.  
JOHN GEORGE HURT, of Baltimore, Md.  
WILLIAM FREDERICK JUDGE, of Ellicott City, Md.  
ALFRED FRANCIS JUNGERS, of Timonium, Md.  
DON GEORGE KADRON, of Pasadena, Md.  
ALVIN GERSON KATES, of Baltimore, Md.  
GEORGE ARTHUR KEIGLER, of Lutherville, Md.  
ROBERT DOLAN KELLEY, of Baltimore, Md.  
HAROLD KLAPPER, of Baltimore, Md.  
ROY RALPH LAMBERT, of Towson, Md.

KENNETH MARTIN LAPP, of Linthicum Heights, Md.  
WILLIAM LANE LETSCH, of Baltimore, Md.  
DON BOYD MCCLAIN, of Baltimore, Md.  
ROBERT WALLACE MCNIEL, of Towson, Md.  
JOHN EDWARD MILLER, of Baltimore, Md.  
EDWARD ANDREW MOORE, JR., of Baltimore, Md.  
WALTER JOSEPH MULHERN, of Baltimore, Md.  
ROBERT EUGENE MURPHY, of Fullerton, Md.  
JOHN KENNETH NIEBERDING, of Baltimore, Md.  
ROBERT BRUCE NOLAN, of Baltimore, Md.  
HUDSON TAYLOR PATTEN, III, of Baltimore, Md.  
EMMANUEL JOSEPH PERROTTI, of Catonsville, Md.  
CHARLES JOHN PETERSON, of Baltimore, Md.  
JAMES LELAND PLOWDEN, of Lutherville, Md.  
WINFORD ELMO PORTER, of Baltimore, Md.  
LAWRENCE MARTIN RACKSON, of Baltimore, Md.  
CLIFTON ALVIN RAU, of Baltimore, Md.  
DAVID ALAN REINHART, of Baltimore, Md.  
CARL WEBSTER RICE, JR., of Baltimore, Md.  
ROBERT EDWIN RICHARDS, SR., of Baltimore, Md.  
EARL ROBERTSON SCHLISSLER, of Baltimore, Md.  
FRANK GUSTAV SCHUETZ, of Baltimore, Md.  
CHARLES SCHULZ, JR., of Baltimore, Md.  
HOWARD CARL SEEGER, of Baltimore, Md.  
JOSEPH THOMAS SKUDRNA, of Glen Burnie, Md.  
ALBERT JOSEPH SLECHTER, JR., of Baltimore, Md.  
ALLAN LEE SPENCER, of Glen Burnie, Md.  
LOUIS JOSEPH EDWARD STEINITZ, of Baltimore, Md.  
ALBERT RICHARD THOMAS, of Baltimore, Md.  
ROBERT SEBASTIAN THOMAS, of Baltimore, Md.  
ROBERT FRANK VITEK, of Timonium, Md.  
ANDREW CLARK WALLACE, of Baltimore, Md.  
WAYNE LEMMON WEIGLE, of Baltimore, Md.  
CARL ERIC WESTMAN, of Baltimore, Md.  
DAVID LIBERTY WILEY, of Baltimore, Md.  
WALTER E. WINDT, of Baltimore, Md.  
THOMAS WALSH WOODARD, of Timonium, Md.  
KENNETH ULON ZAJIC, of Randallstown, Md.  
HAROLD ZALLIS, of Randallstown, Md.

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### *Graduating with Honors*

FREDERICK JAMES CONRAD  
WILLIAM ERNEST FRANK  
JOSEPH FRANCIS GUMNICK  
DON GEORGE KADRON

WILLIAM LANE LETSCH  
JOHN KENNETH NIEBERDING  
FRANK GUSTAV SCHUETZ  
DAVID LIBERTY WILEY

## MASTERS OF SCIENCE IN ENGINEERING

*in McCoy College*

*with titles of essays*

JAMES HAROLD BROWN, of Severna Park, Md., B. S. E. E. Lamar State College of Technology, 1955. Electrical Engineering.

The Characteristics of a Junction Transistor Switch.

CHUCK F. DER, of Baltimore, Md., B. S. E. E. Drexel Institute of Technology, 1955. Electrical Engineering.

Silicon Controlled Rectifier in High Power and High Frequency Operation.

WILLIAM JOSEPH DORMAN, JR., of Baltimore, Md., B. S. E. E. Southwestern Louisiana Institute, 1951. Electrical Engineering.

Transfer Functions for the Accurate Simulation of Time Delay.

WILLIAM EMORY RUPP, of Baltimore, Md., B. E. E. Georgia

Institute of Technology, 1952; E. E. North Carolina State College, 1955. Electrical Engineering.

Mutually Coupled Energy as Applied to Array Patterns.

RAYMOND WARRICK SEARS, JR., of Calonsville, Md., B. E. E. Cornell University, 1958. Electrical Engineering.

Tunnel Diode Digital Circuits.

CHARLES MERVYN WEANT, of Baltimore, Md., B. E. (Mechanical) The Johns Hopkins University, 1949; B. E. (Industrial), 1950. Electrical Engineering.

A Review of Three Semi-Conductor Diodes.

JAMES JOSEPH WILLEN, of Ellicott City, Md., B. E. E. Cornell University, 1958. Electrical Engineering.

The Use of Microwave Wheatstone Bridge for Microwave Admittance Measurements.

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## MASTERS OF SCIENCE

*in McCoy College*

*with titles of essays*

HANNAH G. MCKEE CROSSWHITE, of Towson, Md., B. A. Western Maryland College, 1943. Physics.

The Ultraviolet Bands of OT.

ERICH GOLDMEIER, of Perry Point, Md., Ph. D. University of Frankfurt, Germany, 1936; M. D., 1938. Physics.

Electroluminescence.

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## MASTERS OF EDUCATION

MARY ELINORE GAREIS BARCLAY, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1957.

WILLIAM MILTON BOWEN, JR., of Baltimore, Md., B. A. The Johns Hopkins University, 1952.

GEORGE HORACE BOWMAN, of Baltimore, Md., B. A. Oberlin College, 1951.

ROBERT ELIAS BREITENBACH, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1952.

ETHEL ANNA KLOTZ BROWN, of Baltimore, Md., B. A. Ohio Wesleyan University, 1952.

GORDON AUGUST BRUNO, of Baltimore, Md., B. A. Earlham College, 1958.

DANIEL MURRAY CHESTON, of Baltimore, Md., B. S. United States Military Academy, 1934.

VONDALEE HARRIS CLARK, of Baltimore, Md., B. S. Coppin State Teachers College, 1955.

LORETTA EILEEN COTTRILL, of Baltimore, Md., B. S. The Johns Hopkins University, 1959.

DOROTHY SISK EDEL, of Towson, Md., B. S. State Teachers College, Towson, Md., 1940.

CAROLYN ELIZABETH FISCHBACH, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1957.

MARY JANES FISHER, of Baltimore, Md., B. S. Mary Washington College, 1946.



- JOHN ROBERT FRENCH, of Brooklandville, Md., B. A. Yale University, 1954.
- HELEN O'BOYLE GAINS, of Baltimore, Md., B. S. The Johns Hopkins University, 1940.
- ROBERT FRANCIS GECKLE, of Kingsville, Md., B. S. Loyola College, 1958.
- SYLVIA ANN GIVANS, of Baltimore, Md., B. S. State Teachers College, Salisbury, Md., 1955.
- MILTON GOLDBERG, of Baltimore, Md., B. S. The Johns Hopkins University, 1943.
- ELIZABETH HENRY GROSS, of Cleveland, Ohio, B. A. College of Notre Dame of Maryland, 1935; B. L. S. Columbia University, 1936.
- KAREN DUVAL JACOBSEN, of Towson, Md., B. S. State Teachers College, Towson, Md., 1955.
- THEODORE DAVID JUMP, of Severna Park, Md., B. A. Yale University, 1956.
- MARY WATHEN TYLER KACKLEY, of Arlington, Va., B. S. State Teachers College, Towson, Md., 1953.
- MARY FRANCES SOURS KERNS, of Baltimore, Md., B. S. Madison College, 1943.
- CHRISTINA PEACH KLEIN, of Woodstock, Md., B. S. The Johns Hopkins University, 1956.
- JAMES BENJAMIN LEAGUE, JR., of Baltimore, Md., The Johns Hopkins University, 1960.
- LILLIAN ROBERTA LEE, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1959.
- BERNARD LERNER, of Baltimore, Md., B. A. The Johns Hopkins University, 1955.
- EDWARD GEORGE MACKENZIE, of Baltimore, Md., B. A. Geneva College, 1957.
- EDMUND LEE MITZEL, of Towson, Md., B. S. State Teachers College, Towson, Md., 1957.
- GWENLLIAN DAVIS MOSER, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1950.
- BEATRICE CARRINGTON MYERS, of Baltimore, Md., B. A. Morgan State College, 1940.
- JULIA ANN POHLMAN, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1956.
- HOWARD CHARLES PORTMAN, of Reisterstown, Md., B. S. State Teachers College, Towson, Md., 1953.
- WILLOTT DAVID SAXBERG, of Baltimore, Md., B. S. University of Maryland, 1958.
- HENRY DOUGLAS SCRIBA, of Reisterstown, Md., B. S. The Johns Hopkins University, 1956.
- CHARLES HENRY ALBERT SEITZ, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1952.
- CLYDE RAYMOND SHALLENBERGER, of Baltimore, Md., B. A. Elizabethtown College, 1953; B. D. Bethany Seminary, 1953.
- WILLIAM OSCAR SIMMONS, of Aberdeen, Md., B. S. State Teachers College, Towson, Md., 1953.
- THOMAS FRANCIS SMITH, of Baltimore, Md., B. A. Villanova University, 1934.
- HELEN COLE WILGUS SWANSON, of Lutherville, Md., B. A. University of Delaware, 1957.
- LOUIS JAMES VADORSKY, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1954.
- ELIZABETH WARREN, of Snow Hill, Md., B. A. Western Maryland College, 1928.
- IRIS ALMA WEAVER, of Baltimore, Md., B. A. Morgan State College, 1952.
- CAMILLA JACKSON WILLIAMS, of Baltimore, Md., B. S. Coppin State Teachers College, 1952.
- CHARLES RONALD WOESSNER, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1957.

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## *CERTIFICATES OF ADVANCED STUDY IN EDUCATION*

- MARVIN LEONARD GREENBAUM, of Baltimore, Md., B. S. The Johns Hopkins University, 1950; M. Ed., 1956.
- DONALD LEE KASTNER, of Woodstock, Md., B. S. State Teachers College, Towson, Md., 1952.
- DANIEL JOHN MORAN, of Baltimore, Md., B. A. Davis and Elkins College, 1935; M. Ed. The Johns Hopkins University, 1958.
- LUCIEN FRANCIS PETERS, JR., of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1942; M. Ed. The Johns Hopkins University, 1950.
- CHARLES SUSSMAN, of Baltimore, Md., B. S. The Johns Hopkins University, 1947; M. Ed., 1954.

(5)



## MASTERS OF SCIENCE

*in the School of Hygiene and Public Health*

*with titles of theses*

CHARLES ANELLO, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1958. Biostatistics.

The Competing Risk Model When the Mortality Intensities are Assumed to be a Linear Function of Time.

JUDITH NORA CONANT, of Oceanside, Calif., A.B. Western College, 1959. Biostatistics.

Two Nomograms for Determining Sample Size.

KENNETH DELEE WILLIAMS, of Baltimore, Md., B. S. University of Richmond, 1951; M. S. University of Virginia, 1956. Radiological Science.

An Air-Equivalent Scintillation Detector for Diagnostic X rays.

SISTER M. ROSALEEN DUNLEAVY, C. S. C., of Notre Dame, Ind., B. A. Saint Mary's College, 1947. Microbiology.

The Enhancement of Surface Phagocytosis by Normal Serum.

MARIA ELEK ROBERTS, of Philadelphia, Pa., A. B. Radcliffe College, 1957. Pathobiology.

The Lucke Frog Adenocarcinoma.

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## DOCTORS OF SCIENCE

*in the School of Hygiene and Public Health*

*with titles of theses*

BENJAMIN JON BARNHART, of Elkhart, Ind., A. B. Indiana University, 1958; M. A., 1959. Biochemistry.

A Study of the Cellular Mechanism for Uptake of Transforming DNA of *Hemophilus Influenzae*.

JOSEPH SHAUO HUANG, of Baltimore, Md., B. S. National Sun Yat-sen University, 1941; A. M. Stanford University, 1948. Pathobiology.

The Susceptibility of Chick Embryo Epidermis in Organ Culture to Influenza Virus and the Influence of Vitamin A.

RICHARD LEVERS PHARO, of Baltimore, Md., B. S. Pennsylvania State University, 1957; M. S., 1959. Biochemistry. Catalytic Site of Pepsin.

(3)

## MASTERS OF PUBLIC HEALTH

DEVA PRASAD BANERJI, of Bihar, India, M. B. B. S. Patna University, 1950; D. P. H. University of Calcutta, 1952; D. I. H., 1960.

AKHTAR IQBAL BEGUM, of Dacca, Pakistan, M. B. B. S. Dacca University, 1954.

MAHMUDA BEGUM, of Lahore, Pakistan, M. B. B. S. University of the Panjab, 1948.

ROBERT H. BONNER, of Oshkosh, Wis., A. B. Grinnell College, 1954; M. D. Northwestern University, 1958.

JOSE ANTONIO CANTON, of Granada, Nicaragua, M. D. National University of Nicaragua, 1958.

MARY ANN KEETER CASTON, of Baltimore, Md., B. S. in Nursing University of North Carolina, 1957.

JARED M. DUNN, of Murray, Utah, B. S. University of Utah, 1950; M. D., 1959.

WILLIAM BLUFORD DYE, of Belton, S. C., B. S. Furman University, 1949; M. D. Medical College of South Carolina, 1954.

RUFUS S. GARDNER, JR., of Salisbury, Md., M. D. Medical College of Virginia, 1948.

DOROTHY RUTH GILBERT, of Pittston, Pa., B. S. in Education University of Pennsylvania, 1949.

JEROME ARTHUR HALPERIN, of Passaic, N. J., B. S. Rutgers University, 1958.

PETER VANVECHTEN HAMILL, of Annapolis, Md., A. B. University of Michigan, 1947; M. D., 1953.

- FREEMAN CORNELIUS HAYS, of Danville, Va., B. S. in Pharmacy University of Mississippi, 1941; M. D. George Washington University, 1945.
- IMAN HILMAN, of Bandung, Indonesia, M. D. University of Indonesia, 1959.
- PADAM CHAND JAIN, of Lucknow, India, B. Sc. Lucknow University, 1950; M. Sc., 1952.
- BYRON T. JOHNSON, JR., of Baltimore, Md., M. D. University of Arkansas, 1951.
- HEDLEY CLARENCE LENNAN, of San Francisco de la Caleta, Republic of Panama, B. S. Bishop College, 1949; M. D. University of Panama, 1958.
- J. ROBERT LINDSAY, of Silver Spring, Md., A. B. Dartmouth College, 1943; M. D. University of Pennsylvania, 1946.
- GERALD ROBERT LAIRD LYONS, of Dublin, Republic of Ireland, B. A. University of Dublin, 1950; M. B., B. Ch., B. A. O., 1953.
- GEORGE WILLIAM MARTIN, of Branchville, S. C., B. S. University of South Carolina, 1943; M. D. Medical College of South Carolina, 1947.
- GERARD MARTINEAU, of Sainte Foy, Canada, M. D. Laval University, 1949; D. P. H. University of Montreal, 1956.
- ALFONSE THOMAS MASI, of New York, N. Y., B. S. The College of the City of New York, 1951; M. D. Columbia University, 1955.
- MARIE JOY MASON, of Colonial Heights, Va., B. A. University of Richmond, 1953; M. D. Medical College of Virginia, 1957.
- GENEVIEVE ELIZABETH MURRAY MATANOSKI, of Baltimore, Md., A. B. Radcliffe College, 1951; M. D. The Johns Hopkins University, 1955.
- EUGENE GREGORY MCCARTHY, JR., of Boston, Mass., B. A. Boston College, 1956; M. D. Yale University, 1960.
- BARUCH MODAN, of Tel Aviv, Israel, M. D. Hebrew University, 1958.
- RUBEN NAZARIO, of Puerto Nuevo, Puerto Rico, B. S. in Biology University of Puerto Rico, 1952; M. D., 1956.
- TARAS NOWOSIWSKY, of Brooklyn, N. Y., A. B. Columbia University, 1955; M. D. Harvard University, 1958.
- ENRIQUE PADILLA BORJES, of Guatemala City, Guatemala, M. D. University of San Carlos of Guatemala, 1959.
- JOHN BASIL SARATSIOTIS, of Baltimore, Md., M. D. National University of Athens, 1939.
- HOLMES GOODLOE SARGENT, of Barlow, Ky., B. S. Murray State College, Ky., 1936; M. D. University of Louisville, 1946.
- ROBERT A. SCHNEIDER, of Mendon, Mich., A. B. Taylor University, 1952; M. D. University of Michigan, 1956.
- NARAYAN KESHARY SHAH, of Katmandu, Nepal, M. B. B. S. University of Calcutta, 1959.
- KATHLEEN ANDERSON SWALLOW, of Edmonton, Canada, B. Sc. in Arts University of Alberta, 1935; M. D. 1946.
- EILEEN FRANCES SWEENEY, of Washington, D. C., M. B. Ch. B. University of Glasgow, 1957.
- DAVID TINGLE, of Hopwood, Pa., M. B. Ch. B. University of Sheffield, 1952; D. P. H. University of London, 1956; D. I. H., 1956.
- ALBERT J. TUYNS, of Geneva, Switzerland, M. D. University of Brussels, 1948.
- RODOLFO R. VARIAS, of Rizal, Republic of the Philippines, M. D. University of the Philippines, 1953.
- EMMANUEL VOULGAROPOULOS, of Lowell, Mass., B. S. Tufts College, 1952; M. D. Catholic University of Louvain, 1958.
- JOHN ROSS WILEY, of Aurora, Colo., B. S. University of New Mexico, 1952; M. D. University of Colorado, 1957.

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## DOCTORS OF PUBLIC HEALTH

*with titles of theses*

- FRANK E. LUNDIN, JR., of Baltimore, Md., B. A. Manchester College, 1949; M. D. Indiana University, 1953; M. P. H. The Johns Hopkins University, 1959. Epidemiology. The Epidemiology of Cervical Carcinoma in Memphis, Tennessee.
- NGHIEM LENH THIEU, of Saigon, Vietnam, M. D. University of Hanoi, 1952; M. P. H. University of Michigan, 1956; Sc. M. Hyg. Harvard University, 1960. Pathobiology. Experimental Epidemiology of Upper Respiratory Infection of Chicks.
- GEORGE KAZUNARI TOKUHATA, of Arlington, Va., B. Ec. Keiogijuku University, 1950; M. A. Miami University, 1953; Ph. D. State University of Iowa, 1956. Chronic Diseases. Familial Aggregation of Lung Cancer: with Special Reference to Smoking.

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## *DOCTORS OF MEDICINE*

- DAVID JOHNSON ANDREW, of Baltimore, Md., A. B. Williams College, 1958.
- GEORGE WILLIAM APPEGATE, of Indianapolis, Ind., A. B. Wabash College, 1958.
- CHARLES HALL ASHIFORD, JR., of New Bern, N. C., A. B. University of North Carolina, 1958.
- JOHN MCFARLAND BERGLAND, III, of Baltimore, Md., A. B. Princeton University, 1954.
- ALAN JAY BLOCK, of Baltimore, Md., B. A. The Johns Hopkins University, 1958.
- JAMES LORENZEN BOYER, of Silver Spring, Md., A. B. Haverford College, 1958.
- THOMAS HOWARD BURROWS, of Elmhuist, Ill., A. B. Cornell University, 1956.
- GEORGE JACOB BUSCH, of Callicoon, N. Y., B. S. Union College, Schenectady, N. Y., 1958.
- JOHN LEMUEL CAMERON, of Farmington, Mich., A. B. Harvard College, 1958.
- GEORGE JOHN CARANASOS, of Irvington, N. J., B. S. St. Peter's College, 1958.
- WILLIAM JOSEPH CASEY, II, of Ruxton, Md., B. A. The Johns Hopkins University, 1958.
- DAVID G. CONNOR, of Manchester, N. H., A. B. College of the Holy Cross, 1958.
- CRILE CRISLER, of Memphis, Tenn., A. B. Princeton University, 1958.
- JOHN WARNER DUCKETT, JR., of Dallas, Texas, A. B. University of Texas, 1958.
- THOMAS PATRICK MICHAEL DUFFY, of Brooklyn, N. Y., B. S. St. Peter's College, 1958.
- JOSEPH CARR EGGLESTON, of Memphis, Tenn., A. B. Duke University, 1958.
- PARK WILLIAM ESPENSCHADE, JR., of Hyattsville, Md., B. S. George Washington University, 1958.
- VINCENT JUSTUS FELITTI, JR., of North Bergen, N. J., A. B. Dartmouth College, 1957.
- GERALD ARTHUR MURRAY FINERMAN, of Brooklyn, N. Y., A. B. University of Pennsylvania, 1958.
- BRYAN WILLIAM FLEMING, JR., of Atlanta, Ga., B. S. Emory University, 1958.
- HENRY JOSEPH FRIEDMAN, of Bethpage, N. Y., B. S. University of Wisconsin, 1958.
- JOHN RICHARD GAINTNER, of Lancaster, Pa., A. B. Lehigh University, 1958.
- JAMES ALEXANDER GARDNER, of Salem, Va., B. S. Davidson College, 1958.
- MARTIN DAVID GELFAND, of New York, N. Y., A. B. Harvard College, 1958.
- HENRY GEWURZ, of South Bend, Ind., A. B. Indiana University, 1958.
- SAMUEL MARTIN GILLMAN, of Brooklyn, N. Y., A. B. New York University, 1958.
- FELIX ISAAC GOTTLIEB, of Brooklyn, N. Y., A. B. Princeton University, 1958.
- CHARLES EDWARD GRAHAM, of Montgomery, Ala., A. B. Huntington College, 1958.
- BARBARA HARTLEY GREENE, of Brooklyn, N. Y., A. B. Vassar College, 1958.
- CARL FREDERICK HAMMERSTROM, JR., of Jamestown, N. Y., A. B. Harvard College, 1958.
- MILLIE ANN PITTS HANCOCK, of Newton, N. C., A. B. Woman's College, University of North Carolina, 1958.
- GEORGE RANDOLPH HAND, of Carbondale, Ill., A. B. Southern Illinois University, 1958.
- DAVID TENNYSON HARPER, JR., of St. Leonard, Md., A. B. Harvard College, 1958.
- FREDERICK BARRIE HENDRICKS, of Indianapolis, Ind., A. B. DePauw University, 1958.
- DAVID THOMAS HOCHBERG, of Willimantic, Conn., B. A. The Johns Hopkins University, 1958.
- RUTH WINIFRED HOUSE, of Baltimore, Md., A. B. Goucher College, 1958.
- HAROLD STANLEY ISAACSON, of Long Branch, N. J., A. B. Rutgers University, 1958.
- LAWRENCE FRANKLIN JELSMA, of Louisville, Ky., A. B. Princeton University, 1958.
- RONALD FREDERICK JOHNSON, of Markham, Ill., B. S. Purdue University, 1957; M. S. 1958.
- BARRY HUBERT KAPLAN, of Flushing, N. Y., A. B. New York University, 1958.
- HAIG HAGOP KAZAZIAN, JR., of Toledo, Ohio, A. B. Dartmouth College, 1959.
- THOMAS MARTIN KILBRIDGE, of Oak Park, Ill., B. S. Georgetown University, 1958.



- JOHN KIESS KURTZ, of Cleveland Heights, Ohio, A. B. Oberlin College, 1958.
- PERRY ALBERT LAMBERT, of Sparks, Nev., A. B. Stanford University, 1958.
- WILLIAM COBB LANE, JR., of Belleville, N. J., A. B. Duke University, 1957.
- HOWARD M. I. LEIBOWITZ, of Richmond Hill, N. Y., B. A. The Johns Hopkins University, 1958.
- EDWARD BAXTER MARSH, JR., of Bethesda, Md., A. B. Princeton University, 1958.
- BERNARD LAWRENCE MCGOWAN, of Paducah, Ky., B. S. University of Notre Dame, 1958.
- CHARLES EDWARD MIZE, of Smithville, Texas, B. A. Rice Institute, 1955; Ph. D. The Johns Hopkins University, 1961.
- ALBERT STEPHEN MOST, of Yonkers, N. Y., A. B. Amherst College, 1958.
- EDWARD BERNARD MURPHY, JR., of Newton, Mass., B. S. Boston College, 1958.
- JEROME VINCENT MURPHY, of New York, N. Y., A. B. Princeton University, 1958.
- ARTHUR OLEINICK, of Detroit, Mich., A. B. University of Michigan, 1957; M. P. H. 1959.
- JAMES JOHN PARKS, of Baltimore, Md., B. S. University of Minnesota, 1952; M. S. 1955; Sc. D. The Johns Hopkins University, 1958.
- GEORGE LEONARD PICKEL, JR., of Baltimore, Md., B. A. The Johns Hopkins University, 1958.
- THOMAS HOOKER POWELL, of Baltimore, Md., A. B. Princeton University, 1954.
- WILLIAM HUTSON PRIOLEAU, JR., of Charleston, S. C., A. B. University of Virginia, 1958.
- ROBERT RICHARD RICKERT, of Wauwatosa, Wis., A. B. University of Michigan, 1958.
- JOSEPH ARTHUR ROMEO, of War, W. Va., B. S. University of Notre Dame, 1958.
- FREDERICK MALCOLM ROSENBLUM, of Annapolis, Md., B. A. The Johns Hopkins University, 1958.
- JOHN ANTHONY SBARBARO, of Chicago, Ill., B. S. St. Mary's College, Winona, Minn., 1958.
- DONALD WILLIAM SCHLOTT, of Warren, Ohio, B. S. Ohio University, 1958.
- JOHN JOSEPH PHILIP SCHRUEFER, of Bel Air, Md., B. A. The Johns Hopkins University, 1958.
- SANFORD DARRYL SCHWARTZ, of Miami, Fla., B. A. The Johns Hopkins University, 1958.
- REGINALD OWEN SEAR, of Chatham, N. J., B. A. The Johns Hopkins University, 1957.
- HYUN SEUNG SHIN, of Seoul, Korea, A. B. Washington University, 1958.
- STEVEN GEORGE SILVERBERG, of Brooklyn, N. Y., A. B. Brooklyn College, 1958.
- ROGER LOUIS SOPHER, of Lakewood, Calif., B. S. St. Mary's College of California, 1958.
- EDWARD HAROLD STEIN, of Tampa, Fla., A. B. Vanderbilt University, 1956.
- WILLIAM JOHN STONE, of Baltimore, Md., B. S. Princeton University, 1958.
- OLON SCOTT SUDDUTH, of Nashville, Tenn., A. B. Princeton University, 1958.
- JOHN HENRY TEXTER, JR., of Mohnton, Pa., B. A. The Johns Hopkins University, 1958.
- PHILIP MITCHELL TORRANCE, II, of Akron, Ohio, A. B. Princeton University, 1958.
- PHILLIPS POPE WEDEMEYER, of New Haven, Conn., A. B. Yale University, 1957.
- JAMES ENGLISH WHEELER, of Princeton, N. J., A. B. Harvard College, 1958.
- DENNIS WARREN WHITE, of Athens, Ohio, A. B. Ohio University, 1958.
- RICHARD HILL WINTERBAUER, of Arlington Heights, Ill., A. B. Yale University, 1958.
- HOWARD VICTOR ZONANA, of Yonkers, N. Y., B. S. Syracuse University, 1958.

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# MASTERS OF ARTS

## *in The School of Advanced International Studies*

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|--|---|
| RICHARD ABBOTT, of Soquel, Calif., B. S. in Ch. E. University of California, 1952.         | NANCY PAGE HERSEY, of Needham, Mass., A. B. Smith College, 1960.                      |
| PAUL PRITCHARD BLACKBURN, of Washington, D. C., B. A. Haverford College, 1960.             | JOHN DWIGHT HOLM, of North Olmsted, Ohio, B. A. Wittenberg University, 1960.          |
| EDGAR MARK WILLIAMS BOYD, of Mt. Kisco, N. Y., A. B. Princeton University, 1958.           | GARY WILLIAM HOSKIN, of Bloomfield, Iowa, B. A. Drake University, 1960.               |
| NEBOYSHA RANKO BRASHICH, of Flushing, N. Y., B. A. Trinity College, Hartford, Conn., 1960. | WILLIAM IRVIN JONES, JR., of Hope, Me., B. A. Amherst College, 1960.                  |
| RICHARD ALAN CAULK, of Washington, D. C., A. B. Princeton University, 1959.                | PETER KALLAS, of Niagara Falls, N. Y., B. A. Brown University, 1960.                  |
| DENNIS CHURCH, of Greensburg, Pa., B. S. F. S. Georgetown University, 1959.                | JON PETER KRAUS, of Washington, D. C., A. B. Bucknell University, 1960.               |
| DANIEL HUNT CLARE, of Washington, D. C., B. A. University of Virginia, 1960.               | EUGENE WILLIAM LEVICH, of Brooklyn, N. Y., A. B. Adelphi College, 1958.               |
| JOHN PIERCE CLARK, of Altadena, Calif., B. A. Pomona College, 1957.                        | RONALD LYNN LEYMEISTER, of Reading, Pa., A. B. Dickinson College, 1955; LL. B. 1958.  |
| NICHOLAS GREGORY D'APUZZO, of Brooklyn, N. Y., B. S. Fordham University, 1959.             | GIBBS MACDANIEL, JR., of San Antonio, Texas, B. A. University of Texas, 1958.         |
| ALEXANDER JOSEPH DE GRAND, of Chicago, Ill., B. S. F. S. Georgetown University, 1960.      | SKAIDRITE MALIKS, of New York, N. Y., B. A. Hunter College, 1960.                     |
| PETER DE VOS, of Coronado, Calif., B. A. Princeton University, 1960.                       | ORLANDO DOMENICO MARTINO, of Elizabeth, N. J., A. B. Harvard University, 1950.        |
| ANTONIO DI MUCCIO, of Caserta, Italy, Laurea in Law, University of Naples, 1960.           | MARY ELLEN MCCLELLAND, of Washington, D. C., A. B. Goucher College, 1960.             |
| WILLIAM RAYMOND FEENEY, of Providence, R. I., B. A. Brown University, 1960.                | LEWIS ROY MURRAY, of Memphis, Tenn., B. A. Southwestern at Memphis, 1960.             |
| CHARLES DOUGLASS FOGERTY, of Galt, Canada, B. A. McMaster University, 1956.                | DON SARATH NAWANA, of Angoda, Ceylon, Diploma London University, 1959.                |
| WILLIAM ROBERT FRITSCH, JR., of Louisville, Ky., A. B. Oberlin College, 1958.              | PETER HERBERT OEHRLEIN, of Scarsdale, N. Y., B. S. F. S. Georgetown University, 1960. |
| JAMES SUSUMU FUKUMOTO, of Long Beach, Calif., B. A. Macalester College, 1960.              | JOHN DUNCAN POWELL, of Collingswood, N. J., B. A. University of Maryland, 1955.       |
| GERALD SAUL GOLDBERG, of Brookline, Mass., B. A. Harvard University, 1960.                 | DAVID MICHAEL RANSOM, of Washington, D. C., A. B. Princeton University, 1960.         |
| CARMINE GORGA, of Naples, Italy, Laurea in Political Science, University of Naples, 1959.  | REYNOLD AUGUST RIEMER, of Flushing, N. Y., A. B. Hamilton College, 1959.              |
| ISEBILL VERONIKA GRUHN, of Flushing, N. Y., B. A. Dickinson College, 1960.                 | CHALONER BAKER SCHLEY, of Stevenson, Md., A. B. University of North Carolina, 1957.   |
| CHARLES ROBERT HARE, of Shinnston, W. Va., B. A. West Virginia University, 1960.           | MELVIN WILLIAM SEARLS, JR., of Mamaroneck, N. Y., B. A. Williams College, 1957.       |

JOHN FARR SIMMONS, JR., of Washington, D. C., A. B. Princeton University, 1959.

ASHRAM SINANAN, of Port-of-Spain, Trinidad, Degree of the Utter Bar Barrister-at-Law, Honorable Society of the Middle Temple, London, 1946.

SON SONE, of Phnom Penh, Cambodia, A. B. University of California, 1960.

CARL TAYLOR, of New York, N. Y., B. A. Harvard University, 1959.

JAMES PAUL THOMAS, JR., of Shawnee, Okla., B. A. Yale University, 1951.

JOHN ROBERT VASTINE, JR., of Shamokin, Pa., A. B. Haverford College, 1959.

CHARLES MARBLE VINCENT, of New Canaan, Conn., B. A. Hamilton College, 1960.

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## *MASTERS OF ARTS IN TEACHING*

BARBARA LOUISE BAILEY, of Chicago, Ill., A. B. The University of Illinois, 1960.

BEVERLY JEAN BALDWIN, of Tomah, Wis., A. B. Lawrence College, 1961.

WADE LUDWICK BIGGS, JR., of Pittsburgh, Pa., B. S. in C. E. Carnegie Institute of Technology, 1959.

MARY ANNE BOONE, of Dallas, Texas, A. B. Rice University, 1961.

DAVID CARROLL BRICKER, of St. Louis, Mo., A. B. Amherst College, 1961.

JOHN WALKER BRIGGS, of Mt. Morris, N. Y., A. B. Hobart College, 1960.

KATHRYN CAUKIN BRUNAUER, of Evanston, Ill., A. B. Carleton College, 1960.

CLAUDIA ELIZABETH BURTON, of Arlington, Va., A. B. Oberlin College, 1961.

PHYLLIS JANE CLARK, of Utica, New York, A. B. University of Rochester, 1961.

LEWIS RYLAND CLARKE, III, of Baltimore, Md., A. B. Duke University, 1959.

JANE ABRAMSON COHEN, of Baltimore, Md., A. B. Woman's College of the University of North Carolina, 1961.

CYNTHIA ANN COOK, of East Hampton, N. Y., A. B. Albright College, 1961.

MILLICENT SCOTT DOLL, of Baltimore, Md., A. B. Radcliffe College, 1958.

ELIZABETH JANE DURISEK, of Richfield Spa, N. Y., A. B. University of Rochester, 1961.

JUDITH ANN FELLOWS, of Syracuse, N. Y., A. B. Wellesley College, 1960.

EDWARD JORDAN FOX, JR., of Alexandria, Va., A. B. Rice Institute, 1956.

MARLYN JEAN HARTZELL, of Adena, Ohio, A. B. The College of Wooster, 1961.

PAUL ERICK JOHNSON, of Hopkins, Minn., B. of Physics University of Minnesota, 1960.

EDWARD JOSEPH KELLY, JR., of Baltimore, Md., B. E. S. The Johns Hopkins University, 1956.

SUZANNE M. KIRSCH, of Washington, D. C., A. B. The George Washington University, 1961.

BARBARA ANN KLAUBER, of Denver, Colo., A. B. Wellesley College, 1961.

ROBERT CASWELL LARSEN, of Pelham Manor, N. Y., A. B. Trinity College, Hartford, Conn., 1960.

THEODORE CARL LEMCKE, JR., of White Plains, N. Y., A. B. Middlebury College, 1960.

JOAN ELIZABETH LOHMANN, of Valley Stream, N. Y., A. B. Wilson College, 1961.

CLARINDA HARRISS LOTT, of Baltimore, Md., A. B. Goucher College, 1960.

ANNE JEWETT MARBURY, of Baltimore, Md., A. B. Radcliffe College, 1961.

MARILYN McAFEE, of Lansdowne, Pa., A. B. University of Pennsylvania, 1961.

MARJORIE LOUISE MCKINSTRY, of Warren, Ohio, A. B. Oberlin College, 1961.

BRIAN KEVIN McLAUGHLIN, of Baltimore, Md., A. B. St. Peter's College, 1959.

JOAN ELAINE MILLETTE, of Saxton's River, Vt., A. B. Lake Erie College, 1961.

JAMES CHADWICK MULLIGAN, of Reading, Pa., A. B. University of Notre Dame, 1961.

CAROL ELIZABETH ORNDORFF, of Arlington, Va., A. B. Randolph-Macon Woman's College, 1960.

- ROGER BOWER PENNINGTON, of Summit, N. J., A. B. Amherst College, 1961.
- SUSAN WHITE PLUMMER, of Baltimore, Md., A. B. Smith College, 1961.
- SIDNEY ANNE PRATT, of Indianapolis, Indiana, A. B. Goucher College, 1961.
- ROBERT HERBERT RENSEMA, of Baltimore, Md., B. S. University of Maryland, 1960.
- NANCY MASON RICH, of Berlin, N. H., A. B. University of Maine, 1961.
- ALBERT DEAN ROBINSON, of Sherman Mills, Me., B. A. University of Maine, 1961.
- BARBARA BUTLER ROTHGABER, of Chapel Hill, N. C., B. A. Goucher College, 1961.
- MARJORIE INA SCHWARTZ, of Tenafly, N. J., B. A. Oberlin College, 1960.
- JOHN FREDRIK SCOTT, of Westfield, N. J., A. B. Princeton University, 1958.
- JEAN EILFEN SHUTTER, of York, Pa., A. B. Wilson College, 1961.
- SALLY LINDA SILVERMAN, of Baltimore, Md., A. B. University of Maryland, 1961.
- EUGENE RALPH SMOLEY, JR., of McDonogh, Md., A. B. Cornell University, 1959.
- JOHN THORNTON STARR, JR., of Baltimore, Md., A. B. The Johns Hopkins University, 1961.
- JOYCE STURGIS STEVENS, of Wellesley Hills, Mass., A. B. Oberlin College, 1961.
- MARY ELLEN THOMAS, of New Rochelle, N. Y., A. B. Western College for Women, 1959.
- WILLIAM GLENN VANDERVLIT, of Wilton, Conn., B. S. University of Maine, 1960.
- LUCILE MURIEL KOSSODO VAN HORN, of Geneva, Switzerland, A. B. Ohio Wesleyan University, 1960.

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## MASTERS OF ARTS

*with titles of essays*

- JOSÉ BORIS FARIAS ALARCON, of Santiago, Chile. Geology.
- ROBERTO RAMIREZ DE ARELLANO Y CANO, of Baltimore, Md., B. S. in Chem. Massachusetts Institute of Technology, 1940; M. S. in Metallurgy, 1941. Writing Seminars.  
*Giuseppe* and Other Stories.
- EARL WAYNE BAKER, of St. Ignatius, Mont., B. S. Montana State College, 1952. Chemistry.
- FRANK CARTER BANCROFT, III, of New York, N. Y., B. S. Antioch College, 1959. Physics.  
The Scattering by Thin Graphite Films of Electrons Having an Energy of circa 25 Thousand Electron-Volts.
- MALCOLM SELMAN BAROWAY, of Jacksonville, Fla., B. A. The Johns Hopkins University, 1958. Writing Seminars.  
*The Ultimate Weapon*. A Novel.
- MARLYN JOAN BILLIG, of Oil City, Pa., B. S. Chatham College, 1960. Chemistry.
- ELLEN EVELYNE BLATZHEIM, of Baltimore, Md., A. B. The University of Nebraska, 1961. German.
- FRANKLIN LOUIS BORCHARDT, of New York, N. Y., B. A. St. Peter's College, 1960. German.
- MADELEINE NAOMI BRENNAN, of Saranac Lake, N. Y., A. B. Smith College, 1934. Writing Seminars.  
*In Memory of a Girl Beat*. A Novelette.
- KENNETH JAMES CAMPBELL, of Emmitsburg, Md., B. A. Kenyon College, 1952; B. D. United Theological Seminary, 1955. Oriental Seminary.
- S. MICHAEL CHEILIK, of New York, N. Y., B. A. The City College of New York, 1959. Classics.
- NANCY LOU CLEMENT, of Freeport, N. Y., B. S. St. Francis College, Loretto, Pa., 1960. Chemistry.
- JOHN PATRICK CORCORAN, JR., of Baltimore, Md., B. E. S. The Johns Hopkins University, 1959. Philosophy.
- CAROLYN ANNE COTCHETT, of Wilmington, N. C., A. B. Woman's College of the University of North Carolina, 1958. Romance Languages.
- JAMES BENEDICT CROOKS, of Glen Rock, N. J., B. A. Yale University, 1957. History.
- JEROME BUCKINGHAM DOOLITTLE, of Baltimore, Md., B. A. Wesleyan University, 1959. English.
- FRED YOSHIHIRO EDAMURA, of Picture Butte, Canada, B. Sc. University of Alberta, 1960. Chemistry.



- NANCY BLAKE ELIOT, of Garden City, N. Y., A. B. Hollins College, 1961. Writing Seminars.  
*The Shadows*. A Collection of Stories and Poems.
- JEAN DUNSTAN FAY, of Washington, D. C., A. B. Vassar College, 1958. Art.  
The Bronze Sculpture of Henri Matisse: a Thematic and Stylistic Study.
- ROY ELIOT FELDMAN, of Hempstead, N. Y. Psychology.  
On the Influence of Value upon Free Recall.
- GEORGE WESCOTT FISHER, of Suitland, Md., B. A. Dartmouth College, 1959. Geology.
- RUTH FLORENCE FRAZER, of Baltimore, Md., A. B. Hunter College, 1942; M. R. E. Princeton Theological Seminary, 1948. Oriental Seminary.
- LEAH STARK FREEDLANDER, of Baltimore, Md., A. B. University of Pittsburgh, 1936. Political Science.  
Metropolitanism: A Case Study on Public Education.
- SUZANNE CHERNEY GANS, of Baltimore, Md. Romance Languages.
- NATHAN GROSS, of Brooklyn, N. Y., A. B. Columbia University, 1960. Romance Languages.
- CARL GIRVIN HARKINS, of Colorado City, Texas, B. A. McMurry College, 1960. Chemistry.
- N. WILLIAM HILLER, JR., of Wilmington, Del., B. A. University of Delaware, 1961. Geology.
- ADOLPH NICHOLAS HOFMANN, of Bellerose, N. Y., A. B. Antioch College, 1958. German.
- JOYCE MARIE HOLLAND, of Warwick, R. I., B. A. Pembroke College, 1961. English.
- GERALD QUINCY HURWITZ, of Baltimore, Md., A. B. The George Washington University, 1955. Philosophy.
- SYDNEY JAMES, of Capetown, South Africa, B. A. University of Oklahoma, 1959. Writing Seminars.  
A Play: *The Serpent Song*, and Two Short Stories: *The God* and *Prelude*.
- WILLIAM JOSEPH JUNGELS, of Baltimore, Md., B. S. in Mech. Engr. University of Notre Dame, 1960. Writing Seminars.  
*In Thirst of Sacrament: Poems*.
- JOHN JOSEPH KANE, of Bronx, N. Y., A. B. Fordham College, 1961. English.
- MARVIN JAY KARSON, of Long Branch, N. J., B. B. A. The College of the City of N. Y., 1959. Business and Industrial Management.  
An Analysis of the Severity of Tractor-Semitrailer Accidents.
- EDWARD JOSEPH KEALEY, of Flushing, N. Y., A. B. Manhattan College, 1958. History.
- JAMES CHARLES KELLER, of Cincinnati, Ohio, B. S. Xavier University, Cincinnati, Ohio, 1961. English.
- WALTER LOWELL KRIEGER, of Cape May, N. J., B. A. Wheaton College, Wheaton, Ill., 1961. Writing Seminars.  
*Snow and Rain and Water*. A Collection of Stories.
- HERBERT ROBERT KWASNIK, of Brooklyn, N. Y., A. B. Brooklyn College, 1957. Chemistry.
- NEIL MATTHEW LARKIN, of Baltimore, Md., B. A. Trinity College, Hartford, Conn., 1958. Romance Languages.
- RICHARD EDWARD LAUGHLIN, of Miami, Fla., B. A. University of Miami, 1961. English.
- NEIL ROBERT LUEBKE, of Stillwater, Oklahoma, B. A. Midland College, 1958. Philosophy.
- WILLIAM BRAIDWOOD LYON, III, of Baltimore, Md., B. A. Swarthmore College, 1960. Romance Languages.
- PETER MANSO, of New York, N. Y. English.
- ARTHUR FRANCIS MAROTTI, of New York, N. Y., A. B. Fordham College, 1961. English.
- JOHN WILLARD MARVIN, of Baltimore, Md., B. A. Montana State University, 1954. Mathematics.
- GUY BERTRAM MASERITZ, of Silver Spring, Md., B. A. The Johns Hopkins University, 1959. Political Economy.  
The Relevant Market: A Case Study of the DuPont-General Motors Decision.
- GEORGE MALLARY MASTERS, of St. Simons Island, Ga., B. S. Columbia University, 1960. Romance Languages.
- MAUREEN CELESTE MCCARTHY, of New Orleans, La., B. A. Newcomb College, 1961. German.
- RICHARD MONROE NEWTON, of Corvallis, Ore., B. S. Oregon State College, 1958. Biology.
- MORTON IRWIN NIRENBERG, of Brooklyn, N. Y., B. A. Brooklyn College, 1961. German.
- JO ANN THOMAS NOLEN, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1957. Writing Seminars.  
The Individual and the Community in the World of Joseph Conrad.
- SIGRID GERDA NOVAK, of Chambersburg, Pa., Diploma Sorbonne; Diploma Heidelberg. Writing Seminars.  
*The Henriks Farm*. A Tragic Play in Three Acts.
- DANIEL JOSEPH O'SULLIVAN, of New York, N. Y., A. B. Fordham College, 1961. English.
- ROBERT MACGREGOR PARKER, of Glencoe, Md., B. A. Haverford College, 1961. German.
- GLORIA ANN BOROVY POGGIE, of Baltimore, Md. German.



- SARA JEAN REILLY, of Indianapolis, Ind., A. B. Wellesley College, 1959. History.  
The Italian Immigrants: 1920-1930. A Case Study in Baltimore.
- HANNA BOINSTEDT RENNING, of Normal, Ill., B. A. Michigan State College, 1957. History.
- ROBERT THOMAS RICHARDS, of Lockport, N. Y., B. A. The University of Buffalo, 1958. Political Economy.  
Fiscal Implications of Federal Grant-in-Aid Programs.
- MICHAEL WARREN ROBBINS, of Kalamazoo, Mich., B. A. Colgate University, 1960. Writing Seminars.  
*North of the City.*
- CALVIN AMES ROEDER, JR., of Flushing, N. Y., A. B. Hamilton College, 1961. English.
- NAUCY JOAN SANFILIPPO, of New York, N. Y., A. B. Sarah Lawrence College, 1959. History.
- HANS-ULRICH SCHMINCKE, of Detmold, Germany. Geology.
- GORDON JOEL SCHOCHET, of Baltimore, Md., B. A. The Johns Hopkins University, 1958. Political Science.  
Robert Filmer and His Critics: A Study of Conflicting Theories of Obligation in Seventeenth Century English Political Thought.
- OSCAR CONRAD SCHULTZ, JR., of Baltimore, Md., A. B. Findlay College, 1948; B. D. Winebrenner Graduate School of Divinity, 1952. Oriental Seminary.
- CYNTHIA JEANNETTE SHELTON, of New York, N. Y., B. A. Oberlin College, 1960. Classics.
- ROBERT HAROLD SIEGEL, of Arlington Heights, Ill., A. B. Wheaton College, 1961. Writing Seminars.  
*Ambivalences.* A Collection of Poems.
- ALLAN JOSEPH SILBERGER, of York, Pennsylvania, A. B. University of Rochester, 1955. Mathematics.
- MYRA ELIZABETH SLAWSON, of Baltimore, Md., B. A. Newcomb College, 1955. History.
- MARJORIE FOLIART SMITH, of New York, N. Y., B. A. Vassar College, 1960. Political Science.  
Appropriations and Foreign Policy: Case Study of the Development Loan Fund.
- MAURICE BRITTON SMITH, JR., of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1956. Physics.  
Ionization of Atomic Hydrogen in the Excited 2s State by Electron Impact.
- RICHARD BENJAMIN SPICER, of Sacramento, Calif., B. A. Claremont Men's College, 1958. Political Science.  
Federal Farm Migrant Policy from 1930 through 1960.
- JOHN RICHARD STRACK, of Long Island City, N. Y., A. B. Fordham College, 1961. English.
- AARON STREITER, of Far Rockaway, N. Y., B. A. The City College of New York, 1961. English.
- AARON CHUNG LIONG SU, of Kowloon, Hong Kong, A. B. Hope College, 1959. Chemistry.
- RUTH PEARL SUSSMAN, of Belleville, N. J., A. B. Barnard College, 1960. Romance Languages.
- EDWARD NOEL TODD, of Granville, Ohio, B. A. North Texas State College, 1953. History.
- ENE TOIME, of Hamden, Conn., B. A. Vassar College, 1961. German.
- MARTHA JEANNETTE VICINUS, of Santa Barbara, Calif., B. A. Northwestern University, 1961. English.
- MARTIN LEE WASSERMAN, of New Brunswick, N. J., B. A. The Johns Hopkins University, 1959. English.
- CLARKE LAWSON WILHELM, of Wayzata, Minn., B. A. University of Minnesota, 1957. History.
- WILLIAM HENRY ALLEN WILLIAMS, II, of Allentown, Pa., B. A. Lafayette College, 1959. History.
- PEYTON RANDOLPH WISE, II, of Sparks, Md., B. S. United States Naval Academy, 1953. Physics.  
Low Energy X ray Mass Attenuation Coefficients for Radiation 850 to 3000 eV in Selected Elements with  $Z = 6$  to  $Z = 18$ .

## DOCTORS OF PHILOSOPHY

*with titles of dissertations*

- BURTON ROBERT AARONOFF, of Brooklyn, N. Y., B. S. Brooklyn College, 1956; M. A. The Johns Hopkins University, 1959. Chemistry.  
The Out-of-Ring Claisen Rearrangement.
- MICHAEL ALTSCHUL, of Baltimore, Md., B. A. New York University, 1957. History.  
The Clare Family, 1263-1314.
- WINTHROP EDWARD BACON, of Bar Harbor, Me., B. S. Tufts University, 1956; M. A. Lehigh University, 1958. Psychology.  
The Partial Reinforcement Extinction Effect Following Different Amounts of Training.
- CARL EDWIN BAIN, of Atlanta, Ga., B. A. Baylor University, 1952; M. A., 1953. English.  
A Critical Study of *The Kingis Quair*.
- RICHARD FRANCIS BARTER, of Baltimore, Md., B. A. University of Maine, 1958; M. A. T. The Johns Hopkins University, 1959. Education.  
School District Re-organization: Legal, Financial, and Socio-political Deterrents to Re-organization in the State of Maine.
- RONALD J. BAUMGARTEN, of Brooklyn, N. Y., B. S. Brooklyn College, 1956; M. A. The Johns Hopkins University, 1958. Chemistry.  
The Pyrolysis of N-Nitrosoamides of Amino Acid Esters.
- RICHARD DAVID BECKMAN, of West Hyattsville, Md., A. B. Columbia University, 1953; M. A. University of Rochester, 1954. English.  
Irony and Character in the World of Thomas Hardy.
- LEONARD JOHN BELLO, of Philadelphia, Pa., A. B. Temple University, 1958. Biology.  
The Phosphorylation of Deoxynucleotides in Virus-Infected Bacteria.
- ROLF HANS BENZINGER, of Munich, Germany, B. A. The Johns Hopkins University, 1956. Biology.  
Studies on the Mechanism of Transduction by Bacteriophage P22 of *Salmonella typhimurium*.
- ROBERT DALE BIGGS, of Espanola, Wash., B. A. Eastern Washington College of Education, 1956. Oriental Seminary.  
The ŠA.ZI.GA Incantations, Sumerian and Akkadian Love Charms.
- JOHN WORTH BIRCH, of Urbana, Ill., B. of Com. McGill University, 1954. Political Economy.  
The Changing Location of the North American Wood Pulp Industry, 1880 to 1955.
- BARBARA ANN BLAYLOCK, of Greensboro, N. C., B. A. Woman's College of University of North Carolina, 1954; M. S. University of Arkansas, 1958. Biology.  
Electron Transport Systems of the Chemoautotroph *Ferrobacillus ferrooxidans*.
- JOHN JOSEPH BOSLEY, of Menlo Park, Calif., A. B. West Virginia University, 1956; M. A., 1958. Psychology.  
The Perception of Another's Attitude.
- CHARLES ALAN BRUNS, of Ann Arbor, Mich., B. S. Tufts College, 1952. Physics.  
Neutron Gamma Ray Correlations as a Test of Heavy Particle Stripping.
- BARRY WAYNE BRYANT, of Bedford, Mass., B. S. University of North Carolina, 1954. Physics.  
The Spectra of Doubly and Triply Ionized Ytterbium.
- WILLIAM REED CALLAHAN, S. J., of Baltimore, Md., A. B. Boston College, 1954; M. S., 1955. Physics.  
The Spectrum of Doubly Ionized Gadolinium.
- JOHN ALLYN CARLSON, of Ithaca, N. Y., B. S. Denison University, 1955. Political Economy.  
Investment Decisions in the Face of Technological Change: A Case Study of Telephone Switching Systems.
- LAMAR JOHN RYAN CECIL, JR., of Beaumont, Tex., B. A. The Rice Institute, 1954. History.  
Albert Ballin: A Political Biography.
- NORMAN ALLISON CHAMBERLAIN, of Charleston, S. C., A. B. The University of North Carolina, 1957; M. A., The Johns Hopkins University, 1959. Oceanography.  
Ecological Studies of the Larval Development of *Rhithropanopeus harrissii* (Xanthidae, Brachyura).
- JAMES STANDISH CLEGG, of Baltimore, Md., B. S. The Pennsylvania State University, 1958. Biology.  
The Physiology of Blood Trehalose and Its Function during Flight in the Blowfly.
- EDMUND BENEDICT COLEMAN, JR., of Abbeville, S. C., B. S. The University of South Carolina, 1958; M. A. The Johns Hopkins University, 1961. Psychology.  
Sequential Interferences in Serial Verbal Learning.
- JOHN RUSSELL COLEMAN, of Baltimore, Md., B. A. University of Minnesota, 1955; M. A. Indiana University, 1957. Biology.  
Deoxyribonuclease Activities in the Development of the Frog, *Rana pipiens*.



- ROBERT GEIGER COOK, of Bethlehem, Pa., A. B. Princeton University, 1954; M. A. The Johns Hopkins University, 1961. English.  
A Critical Edition of Einvaldsdóður (Poem on Monarchy) by séra Guðmundur Erlendsson (c. 1595-1670).
- GAROLD NEIL DAVIS, of Ashland, Ore., B. A. Brigham Young University, 1958; M. A. 1959. German.  
German Culture and Literature in England, 1700-1770.
- JAY ROBERT DORFMAN, of New York, N. Y., B. A. The Johns Hopkins University, 1957. Physics.  
The Theory of the Linear Response of Systems Subjected to External Forces.
- MARY C. KEELTY DORFMAN, of New York, N. Y., A. B. Barnard College, 1955; M. A. The Johns Hopkins University, 1956. Chemistry.  
The Kinetics of the Oxidation of Thallium (I) by Cerium (IV).
- THOMAS KEENAN DUNSEATH, of Baltimore, Md., B. S. California State Teachers College, 1955. English.  
The Quest for Peace, Theme and Structure of Spenser's Book of Justice.
- EDWARD DAVID EANES, of Bethesda, Md., B. S. College of William and Mary, 1957; M. A. The Johns Hopkins University, 1959. Chemistry.  
The Crystal Structure of Lithium Dipotassium Trimetaphosphate Monohydrate.
- TILDEN GERALD EDELSTEIN, of Cambridge, Mass., B. S. University of Wisconsin, 1953. History.  
Strange Enthusiasm: Thomas Wentworth Higginson, 1823-1877.
- JOHN FREDERICK ENDICOTT, of Chicago, Ill., A. B. Reed College, 1957. Chemistry.  
An Assay of the Sulphur Exchange between Sulfite and Thiosulfate.
- KENT ERIC ERICKSON, of Spruce Pine, N. C., B. S. University of Maine, 1948; B. A. University of North Carolina, 1949; M. S. University of Chicago, 1955. Physics.  
Precise Determination of Atmospheric Dispersion with Applications to Long-Path Interferometry.
- WILLIAM MERLE FAIRLEY, of South Bend, Ind., A. B. Colby College, 1949; M. S. University of Maine, 1951. Geology.  
The Murphy Syncline in the Tate Quadrangle, Georgia.
- GORDON LUTHER FILBEY, JR., of Philadelphia, Pa., B. E. S. The Johns Hopkins University, 1955; M. S. E., 1958. Mechanics.  
Intense Plastic Waves.
- ROGER WILLIAM FINLAY, of Athens, Ohio, B. A. The Johns Hopkins University, 1957. Physics.  
The  $F^{19}(d, n)Ne^{20}$  Reaction.
- DAVID HACKETT FISCHER, of Ruxton, Md., A. B. Princeton University, 1958. History.  
Federalists and Democracy, 1800-1816.
- JEFFERSON DAVIS FUTCH, III, of Baltimore, Md., B. A. The Johns Hopkins University, 1955. History.  
The United States and the Fall of the Weimar Republic: German-American Relations 1930-1933.
- PAUL JEROME GEIGER, of Montrose, Calif., B. S. University of California, 1951. Physiological Chemistry.  
Activation of L-Glutamate Dehydrogenase by Methylmercuric Bromide. Estimation of Protein Sulfhydryl Groups.
- EDWARD BLEIER GOLDBERG, of Bronx, N. Y., B. A. Columbia University, 1956. Biology.  
The Role of Glycolysis in the Growth of Tumor Cells. I. The Lactic Dehydrogenase Requirement for the Growth and Glucose Uptake of HeLa Cells. II. The Lactic Dehydrogenase Requirement for Maintenance of ATP in HeLa Cells Grown with Glucose.
- JOSIAH BANCROFT GOULD, JR., of New York, N. Y., B. A. Lynchburg College, 1949. Philosophy.  
The Philosophy of Chrysippus.
- ALBERT KIRK GRAYSON, of Windsor, Canada, B. A. University of Toronto, 1955; M. A. 1958. Oriental Seminary.  
A Study of Chronicles and Chronological Lists from Ancient Mesopotamia.
- HIROSHI GUNJI, of Tokyo, Japan, B. S. University of Tokyo, 1954; M. S. 1956. Mathematics.  
Some Arithmetic Properties of Curves of Genus Two Representing Singular Points of Variety of Moduli.
- JAMES HUTCHINSON HAMMONS, of Baltimore, Md., A. B. Amherst College, 1956; M. A. The Johns Hopkins University, 1958. Chemistry.  
The Synthesis of Three Monodeuterionorbornanes and the Stereochemistry of Electrophilic Cleavage of Nortricyclene.
- CHAKRAVARTHY NARASIMMIAN HEMALATHA, of Madras, India, B. Sc. Madras University, 1959. Biology.  
The Interaction of Chromatid Breaks Induced by X rays and Chemical Mutagens in *Vicia faba*.
- IVARS HENINS, of Hay Springs, Nebr., B. A. Friends University, 1955. Physics.  
Precision Density and X ray Diffraction Measurements of Silicon.
- SISTER FREDERICKA JACOB, of Washington, D. C., A. B. Trinity College, Washington, D. C., 1952; M. A. The Johns Hopkins University, 1958. Chemistry.  
A Study of the Effects of Histamine on the Enzymatically Induced Reactions of Glutamine.



- ELKE JORDAN, of Lutherville, Md., A. B. Goucher College, 1957. Biology.  
Internal Induction in the Control of Synthesis of Galactose Pathway Enzymes.
- GERALD KAMBER, of Towson, Md., B. A. Rutgers University, 1950; M. A. Middlebury College, 1952. Romance Languages.  
Max Jacob, Clown and Convert.
- ELI JOEL KATZ, of Brooklyn, N. Y., B. of M. E. Polytechnic Institute of Brooklyn, 1957; M. S. The Pennsylvania State University, 1959. Mechanics.  
Shallow Gravity Waves over a Random Bottom.
- JOHN SPANGLER KIEFFER, of Annapolis, Md., A. B. Harvard University, 1926; M. A. 1929. Humanities.  
Galen's *Institutio Logica*: English Translation, Introduction and Commentary.
- ALVIN ELLIOT KIEL, of Baltimore, Md., B. S. City College of New York, 1950; M. S. New York University, 1952. Physics.  
The Interaction of Paramagnetic Ions with Lattice Vibrations.
- INSUP KIM, of Thistletown, Canada, B. A. Seoul National University, 1956; M. A. The Johns Hopkins University, 1960. Psychology.  
Phonetic Symbolism in Four Unrelated Languages.
- ROBERT WALTER KRAEMER, of Baltimore, Md., A. B. LaSalle College, 1957. Physics.  
Production of Sigma Hyperons in Pion Deuteron Interactions.
- IVOR KRAFT, of Baltimore, Md., M. Ed. The Johns Hopkins University, 1957. Education.  
Education for Idiots: Caring for the Mentally Retarded in Nineteenth Century America.
- DAVID TAYLOR LINDSAY, of Baltimore, Md., B. A. Amherst College, 1957. Biology.  
Developmental Patterns and Immunochemical Properties of Lactate Dehydrogenase Isozymes from the Chicken.
- ANTHONY PETER MAHOWALD, S. J., of Milwaukee, Wis., B. S. Spring Hill College, 1958. Biology.  
Electron Microscopy of *Drosophila melanogaster* Embryos. I. Formation of Cellular Blastoderm. II. Pole Cells and the Ontogeny of Polar Granules.
- RICHARD KENNETH MCKAY, of Timonium, Md., B. A. The Johns Hopkins University, 1943; M. Ed. 1953; C. A. S. Ed. 1959. Education.  
Precarious Organizations: A Study of Maryland's Non-Public Specialized Schools.
- DEFOREST MELLON, JR., of Palo Alto, Calif., B. S. Yale University, 1957. Biology.  
Quantitative Electrophysiological Studies on the Contact Chemoreceptors of the Blowfly.
- THEODORE IVES MESSENGER, JR., of Baltimore, Md., B. A. Yale University, 1950; M. A. The Johns Hopkins University, 1956. Philosophy.  
On Formulating Theories of Universals.
- CHARLES WILLIAM MEYER, of Ames, Iowa, A. B. University of Illinois, 1954; A. M., 1955. Political Economy.  
The Cost Function for Local Telephone Service: Increasing or Decreasing?
- HARRY MORRIS NEUMANN, of Baltimore, Md., A. B. St. John's College, 1952; A. M. University of Chicago, 1954. Classics.  
On Plato's *Euthyphro* and its Relation to the *Theaetetus* and the *Sophist*.
- MIRKO M. NUSSBAUM, of Baltimore, Md., A. B. Rutgers University, 1954; S. M. University of Chicago, 1956. Physics.  
Decay Asymmetries of Charged Sigma Hyperons.
- GEORGE STERLING OFELT, of McLean, Va., B. S. College of William and Mary, 1957. Physics.  
Rare Earth Crystal Spectra.
- DAVID PECK, of New York, N. Y., B. S. in Biology Rutgers University, 1950; M. Sc. 1951. Biology.  
The Role of Tissue Organization in the Cyto differentiation and Metabolism of the Embryonic Chick Neural Retina.
- ARTURS HELMUTS PIKŠIS, of Baltimore, Md., B. S. Colorado Agricultural and Mechanical College, 1954. Physics.  
Energy Levels and Crystal Field of the Gadolinium Ion in  $GdCl_3$  Diluted by Lanthanum and  $Gd(C_2H_5SO_4) \cdot 9H_2O$ .
- WILLIAM ARTHUR PIZANTE, of Aurora, N. Y., B. A. The Johns Hopkins University, 1954; M. A., 1956. Philosophy.  
The Concept of Value in Whitehead's Philosophy.
- RUTH LEAH RASCH, of Washington, D. C., B. A. Bryn Mawr College, 1957; M. A. The Johns Hopkins University, 1960. Political Economy.  
Federal Housing Policy: Its Aims and Its Accomplishments.
- CARL JOHN REMENYIK, of Baltimore, Md., Dipl. Eng. Swiss Federal Institute of Technology, 1951. Mechanics.  
The Orifice Hot-Wire Probe and Its Application to Measurement of Pressure Fluctuations in a Compressible Turbulent Boundary Layer.

- WILLIE LEE NICHOLS ROSE, of Baltimore, Md., B. A. in Ed. Mary Washington College, 1947. History.  
Rehearsal for Reconstruction: The Port Royal Experiment.
- WILFRID ERNEST RUMBLE, JR., of St. Paul, Minn., B. A. University of Minnesota, 1953; M. A. 1956. Political Science.  
The Foundations of American Legal Realism.
- RYUZO SATO, of Akita-Ken, Japan, B. Econ. Hitosubashi University, 1954; M. B. A. The University of Detroit, 1959. Political Economy.  
Fiscal Policy and the Theory of Economic Growth.
- ROBERT BEELER SATTERFIELD, of Blackwater, Va., B. A. Vanderbilt University, 1947; M. A. 1948. History.  
Andrew Jackson Donelson: A Moderate Nationalist Jacksonian.
- NORMAN SCHWARTZ, of Philadelphia, Pa., B. S. in Chem. University of Pennsylvania, 1957; M. A. The Johns Hopkins University, 1959. Chemistry.  
I. Photosensitized Oxygenation of  $\Delta^8$ -Steroids.  
II. Studies on Hydroperoxides as Precursors of Bile Acids.
- RUSSELL ALLEN SHAFFER, of Philadelphia, Pa., B. S. Drexel Institute of Technology, 1956. Physics.  
Radiative Corrections to Decay Processes Mediated by Vector Mesons.
- DAVID MAX SHAPIRO, of Ann Arbor, Mich., B. S. Queens College, 1951. Biology.  
The Purification and Properties of Photosynthetic Pyridine Nucleotide Reductase from *Euglena gracilis*.
- DAVID LEROY SOUTHWICK, of Rochester, Minn., B. A. Carleton College, 1958. Geology.  
Mafic and Ultramafic Rocks of the Ingalls-Peshastin Area, Washington, and Their Geologic Setting.
- JON JOHANNES SPIJKERMAN, of Baltimore, Md., B. A. Friends University, 1956. Physics.  
The High Frequency Limit of the Continuous X ray Spectrum as Observed from a Vapor Target X ray Tube.
- JOSEPH LAWRENCE STRECKER, of Baltimore, Md., B. S. Rockhurst College, 1955. Physics.  
A Mathematical Model of Condensation.
- JOHN CLAY STUELPNAGEL, of Baltimore, Md., B. A. Yankton College, 1955. Mathematics.  
The Topology of Homogeneous Spaces.
- SISTER PATRICIA JULIE SULLIVAN, of Washington, D. C., A. B. Trinity College, Washington, D. C., 1958; M. A. The Johns Hopkins University, 1959. Chemistry.  
An Electron Spin Resonance Study of Free Radicals Trapped at Low Temperatures in Irradiated Alcohols.
- TIMOTHY EDWARD TOOHH, S. J., of Baltimore, Md., B. S. Boston College, 1951; M. S. University of Rochester, 1953; Ph. L. Weston College, 1957. Physics.  
The Existence and Production of the  $\eta$  and  $\omega$  Mesons.
- ROBERT ALLAN VAN KLUYVE, of Baltimore, Md., A. B. University of Rhode Island, 1957; M. A., 1958. English.  
The *Archana deorum* of Thomas Walsingham.
- FERENC VARSANYI, of Baltimore, Md. Physics.  
Theoretical and Experimental Studies of Rare Earth Ions in Crystals.
- DOUGLAS WARNER, JR., of Baltimore, Md., B. S. Brown University, 1946; B. S. Massachusetts Institute of Technology, 1948. Physics.  
The Scattering and Absorption of Electromagnetic Radiation by Matter.
- RUTH FLEISCHMANN WEINER, of Baltimore, Md., B. S. University of Illinois, 1956; M. S., 1957. Chemistry.  
Electron Spin Resonance Study of Radiation Damage in Glycine.
- LEONARD WEISS, of Brooklyn, N. Y., B. E. E. The City College of New York, 1956; M. S. Columbia University, 1959. Electrical Engineering.  
Integral Transforms and Time-Varying Systems.
- WILLIAM STEWART WISE, of Carson City, Nev., B. S. Stanford University, 1955; M. S., 1958. Geology.  
The Geology and Mineralogy of the Wind River Area, Washington, and the Stability Relations of Celadonite.
- HERMAN KENNETH WISKIND, of Philadelphia, Pa., B. M. E. The City College of New York, 1950; M. S. M. E. Purdue University, 1951. Mechanics.  
A Uniform Gradient Turbulent Transport Experiment.
- THOMAS LLEWELLYN WRIGHT, of Washington, D. C., B. A. Pomona College, 1957. Geology.  
The Mineralogy and Petrogenesis of the Southern Part of the Tatoosh Pluton, Mount Rainer National Park, Washington.
- STEPHEN LANDIS WOLFE, of Wormleysburg, Pa., B. S. in Ed. Bloomsburg State Teachers College, 1954; M. S. The Ohio State University, 1959. Biology.  
The Selective Staining of Nucleic Acids for Electron Microscopy in a Model System and in Tissue.
- JOHN LYNDALE YORK, of Fort Smith, Arkansas, B. S. Harding College, 1958. Physiological Chemistry.  
I. The Enzymatic Conversion of D-Glucuronate to L-Xylulose in Animal Tissues. II. The Mechanism of the Reaction of Tris-(hydroxymethyl)-aminomethane and Pentaerythritol with Phenyl Esters. III. The Isolation and Purification of Type a Hemes from Beef Heart.







## *THE UNIVERSITY ODE*

Truth guide our University,  
And from all error keep her free;  
Let Wisdom yield her choicest treasure,  
And Freedom reach her fullest measure;  
Oh, let her watchword ever be  
The truth of God will make you free,  
Will make you free!

Let knowledge grow from more to more,  
And scholars versed in deepest lore,  
Their soul for light forever burning,  
Send forth their fire, unlock their learning,  
And let their faithful teaching be  
The truth alone can make us free,  
Can make us free!

The truth shall crown her sons with fame,  
Their lives inspire with nobler aim,  
Their names made known throughout our borders  
As learning's guide and wisdom's warders,  
And let their watchword ever be,  
The truth for aye shall keep us free,  
Shall keep us free!

## *THE UNIVERSITY MOTTO*

“ Veritas vos liberabit ”

The truth shall make you free.

—St. John 8:32